DOCUMENT RESUME

ED 031 592 08 VT 009 056

By-Larson, Milton E.; Blake, Duane L.

Institute on Occupational Analysis as a Basis for Curriculum Development. Final Report.

Colorado State Univ., Ft. Collins.
Spons Agency-Office of Education (DHEW), Washington, D.C. Bureau of Research.
Bureau No-BR-8-0339
Pub Date Jun 69
Grant-OEG-0-8-080339-3596
Note-112p.
EDRS Price MF-$0.50 HC-$5.70
Descriptors-Charts, Conceptual Schemes, Conference Reports, *Content Analysis, *Curriculum Development, Instructional Materials, *Job Analysis, *Occupational Clusters, Occupational Information, Participant Satisfaction, Program Evaluation, Questionnaires, Summer Workshops, *Vocational Education
Identifiers-*Zoned Analysis

The primary objective of this institute was to develop facility in using the process of zoned analysis for curriculum construction in vocational education. Zoned analysis was defined as a method of graphic delineation by which factors involved in an organizational or research project may be systematically arranged in an orderly sequence. The analysis proceeds from the general to the specific and includes four zones: (1) major areas to be considered, (2) primary breakdown of ideas, (3) subjects for discussion, and (4) details regarding subjects. Examples of the process are included. Participants represented 47 states and Puerto Rico, all vocational services, and included specialists in curriculum construction, directors and supervisors of state and local programs, and vocational teacher educators. A list of participants is appended. (CH)

FINAL REPORT

PROJECT NO. 8-0339
GRANT NO. OEG0-8-080039-3596

INSTITUTE ON OCCUPATIONAL ANALYSIS AS A BASIS FOR CURRICULUM DEVELOPMENT

JUNE 1969

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

OFFICE OF EDUCATION
BUREAU OF RESEARCH

FINAL REPORT

Project No. 8-0339
Grant No. OEG-0-8-080339-3596

INSTITUTE ON OCCUPATIONAL ANAYLSIS AS A BASIS FOR CURRICULUM DEVELOPMENT

Milton E. Larson
and
Duane L. Blake

Colorado State University

Fort Collins, Colorado

June 1969

The research reported herein was performed pursuant to a contract with the Office of Education, U. S. Department of Health, Education, and Welfare. Contractors undertaking such projects under government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION
Bureau of Research

TABLE OF CONTENTS

FOREWORD

This report is submitted in compliance with the provisions of the contract. This report describes the process followed and includes a condensed version of each major presentation as well as the statistical summary of the evaluative findings.

The director desires to express appreciation to all who participated and assisted in making this institute a success.

REPORT SUMMARY

Evaluation of the Institute strongly suggests the value to the participants as reflected in the responses to the form administered on the final day of the institute, the responses to the follow-up study, and the letters received after the end of the institute from individuals who particpated.

The maximum multiplier effect was sought and achieved through careful selection of applicants nominated by the fifty State Directors of Vocational Education.

The objectives of the Institute were to develop greater competencies and better understanding of the process of analysis for curriculum construction in vocational education. Coupled with this purpose was the desire to integrate new innovations in curriculum development with emerging needs in the established vocational services. Part of the focus was on 'students with special needs'.

Established concepts of analysis were not ignored and were included in the program as a base line for new innovations.

Guest instructors included specialists in curriculum construction, directors and supervisors of state programs, and vocational teacher educators. Some represented the agencies of government as the Bureau of Employment Security and the Department of Rehabilitation. Attention was also given to the relationship of guidance to curriculum development.

Incorporated in the Institute was a series of workshop sessions enabling each participant to actually do some of the tasks discussed and apply ideas presented during the more formal sessions by the guest instructors.

Participants represented forty-seven of the fifty states including Alaska and Hawaii. One person was present from Puerto Rico. All of the vocational services were represented. Even though most of the participants were either state supervisors of vocational education or vocational teacher education, a few were directors and teachers of vocational education at the local level.

INTRODUCTION

The curriculum is the 'backbone' of the instructional process. The curriculum is the road-map for vocational instructors to chart the course from meager student interest and knowledge of a vocation or cluster of vocations to achievement of the goal of employment in that vocation. The success of the instructional program is wrapped-up, to a great extent, in the effectiveness of the curriculum. A realistic, functional curriculum depends upon an understanding of the needs and requirements of the occupational field. Determination of the elements of the occupation (the skills, knowledge, habits, and attitudes essential for employment) demands an occupational analysis.

The main purpose of this institute was to help vocational teacher educators and vocational state supervisors to better aid teachers in identifying, analyzing, and converting to curriculum materials the skills and knowledges essential on payroll jobs. The Institute confirmed the assumptions of the investigators that many individuals in positions of leadership were extremely weak in the vital field of curriculum building. A large percentage were lacking in the basic fundamentals of procedures of job analysis for curriculum construction. Others were lacking in the kinds of understanding of the total structure of analysis as a foundation for all vocational and technical curriculum. All services of vocational education can effectively utilize an analysis base.

Several individuals in positions of leadership immediately took steps to implement within their own state, area, or district some of the concepts of analysis presented at the Institute. To many, analysis truly became a meaningful bridge to realistic vocational curriculum construction.

The cluster concept and the systems approach were of vital interest to many. The presentation of the "pert" technique opened for some a method of programming useful also in curriculum construction. While many were quite familiar with the method of blocking of occupational areas and the use of the content analysis chart, few realized the potential of the zoned analysis approach to vocational analysis. Some had the narrow concept of the application of job analysis, failing to recognize the implications for all of the vocational services.

The concepts of many were broadened, of several were reinforced, and of others were focused on particular elements of their own area. Those with interests in special fields recognized that analysis has applications to these fields also.

METHODS

As soon as the proposal was approved the tasks of implementation were started. Each step of the process of implementation is briefly stated to more completely explain the sequence of events.

Consulting Committee

A Consulting Committee was selected to review the tentative program plans and suggest improvements. The committee was composed of five individuals, two State directors and three university teacher educators in vocational and technical education. These individuals represented four different vocational services. In addition the program was reviewed and suggestions received from two members of the U. S. Office of Education. Review of the recommendations of the committee resulted in several changes which undoubtedly strengthened the program. After the institute, the committee met in a post-institute review of the various activities and the outcomes of the project. Again suggestions were received for consideration if similar institutes are sponsored in the future.

Program Planning

The revised program as developed (See Appendix) was planned carefully to reflect the suggestions received, the proposal approved, and the concepts established relative to the significant elements of occupational analysis as a basis for curriculum development.

Guest Instructors

Highly competent guest instructors were selected to present the various topics of the program and to serve as discussion leaders. Twenty-one guest instructors served the institute in this way. Most of these individuals were either State supervisors or vocational teacher educators. Two were employed in leadership positions at the local level. One was affiliated with the U. S. Department of Labor, Bureau of Employment Security, another was an employee of the Department of Rehabilitation.

Trainees

Applicants selected were in most cases employees of State Boards of Vocational Education in positions of leadership as State Supervisors. Some were vocational teacher educators. A few were directors and teachers in the fields of vocational education at the local level. Individuals selected were nominated by the State directors and carefully screened by the selection committee.

Facilities

The Institute was housed in the modern facilities of the Student Center of Colorado State University Corbett Residence Hall serving as headquarters for both individual participants and in many cases other members of the family accompanying the participant.

Program

The program began with a reception on Sunday evening, July 28th. The schedule of the program was closely followed (See Appendix). Certificates of Completion were awarded at the Banquet on Thursday evening. The Institute terminated on schedule at 3:30 Friday afternoon.

RESULTS AND FINDINGS

The program of instruction consisted of two major divisions. The first consisted of a series of presentations by highly knowledgable guest instructors of topics directly related to analysis and curriculum building. The second part consisted of a series of four integrated workshop sessions focused on the zoned analysis approach, the use of the content analysis chart, building the course of study, and translating analysis into instructional materials.

During the workshop sessions each individual as a participant of a smaller group had the opportunity to apply the concepts presented. Each of the instruments discussed were developed in part. Participants were encouraged to complete the development on their own at a later time. Approximately 60 trainees desired university credit for the institute. As a result these individuals completed a project growing out of this aspect of the workshop activities.

Included in this report are condensed versions of each of the major presentations as well as the statistical data relative to the evaluation of the institute on the final day of the institute and the follow-up study completed several months after the termination of the institute.

CONCLUSIONS AND RECOMMENDATIONS

Analysis of the findings as well as the synthesis of the comments of the trainee and the guest instructors point to the values derived from the institute.

The need for greater emphasis on occupational analysis and the relationship of analysis to curriculum building was confirmed repeatedly.

The opportunity to participate was appreciated by most participants as verbalised to the institute director and other members of the staff.

The impact of the institute was strongly indicated by the responses of participants to the evaluative instruments (Detailed results indicated in another section of this report). The multiplier effect as sought through the selection of leadership personnel as trainees seems assured. However, the emphasis of curriculum building is a continuous effort and one that needs to be continuously stimulated with new innovations and applications at the local as well as the state and national levels.

On the basis of the findings as revealed in other sections of this report, it is strongly recommended that continuous attention be given to the various aspects of development of curriculum in vocation and technical education. This must be an ongoing effort and needs the encouragement of Federal support.

EVALUATION OF INSTITUTE

The evaluation of the institute by the participating trainees occurred first on the last day of the Institue and again as a follow-up conducted several months after the completion of the Institute.

'Highlights' of Trainee Responses on Last Day of Institute

Most students felt that the purposes of the Institute were clear and had been achieved. Almost all felt that they had learned many new things that could not have been learned simply by reading a book. Very few felt that the Institute was too elementary and most agreed that the information presented was not too advanced. The pattern of organization of the sessions seemed logical to most of the participants. Most stated that the institute met expections and that the content presented was applicable. The feeling of the majority indicated that the Institute should be offered again in future years.

The weak point of the institute as suggested by the participants indicated that more time should be spent in discussions of the application of analysis to the total curriculum, more examples of how analysis techniques could be applied in other services of the curriculum should be given, and the size of the discussion sessions should be reduced. Some felt too that there was a need for better organization and leadership in the group sessions and that the coordination between the group sessions and the presentations by the major speakers should be

improved. Some also felt that the scheduling was too rigid. All of these comments will be carefully evaluated prior to the next institute in this field.

Approximately one-half of the participants commented on the excellent presentations by outstanding speakers. Nearly one-third indicated they would more carefully review existing curriculum materials as a result of this institute.

Results of Follow-up Three Months After Institute

After a period of three months many participants indicated that the information gained would be extremely useful in making analysis for curriculum construction, in teaching others how to use analysis, in construction of curricula, and in teaching others to better construct curricula.

Eighty-seven of the 102 participants said that they would recommend that their friends in vocational education attend such an institute if the opportunities were made available. Sixty-nine indicated that they would attend a more advanced institute focused on analysis for curriculum construction, if the opportunity were presented.

Complete tabular information of the findings are provided in this report relative to both the follow-up study and the study relative to participants' evaluation at the time of the institute.

TABLE I

ANALYSIS INSTITUTE PARTICIPANTS' RESPONSES TO EVALUATIVE STATEMENTS ON FINAL DAY OF INSTITUTE

I Feel That:	Strongly Agree		Agree		Undecided		Disagree		Strongly Disagree	
	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
The purposes of the Institute were clear to me	29	41	47	52	3	3	0	0	4	4
The objectives of this Institute were not realistic	3	3	19	21	5	6	45	49	19	21
Specific purposes made it easy to work efficiently	11	12	57	63	14	15	8	9	1	1
The participants accepted the purposes of this Institute	7	8	64	70	8	9	8	9	2	2
The objectives of this Institute were not the same as my objectives	4	4	23	25	8	9	41	45	16	18
I did not learn anything new	1	1	1	1	0	0	29	32	60	66
The material presented was valuable to me	40	44	48	53	2	2	1	1	0	0
I could have learned as much by reading a book	0	0	3	3	2	2	44	48	42	46
Possible solutions to my problems were considered	8	9	65	71	8	9	9	10	1	1

TABLE I, Continued

I Feel That:	Strongly Agree		Agree		Undecided		Disagree		Strongly Disagree	
	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
The information presented was too elementary	3	3	4	4	1	1	54	60	28	31
The speakers really knew their subjects	27	30	60	66	1	1	3	3	0	0
The discussion leaders were well prepared	27	30	35	38	6	6	16	18	7	8
I was stimulated to think about the topics presented	24	26	62	68	1	4	4	4	0	0
New acquaintances were made which will help in the future	42	46	46	50	3	3	0	0	0	0
The schedule was too fixed	4	4	19	21	8	9	51	56	9	10
The group discussions were excellent	13	14	33	36	5	5	30	33	10	11
There was very little time for informal conversation	10	11	22	24	6	7	47	52	6	7
I did not have an opportunity to express my ideas	55	5	12	13	4	4	55	61	15	16
I really felt a part of this group	21	23	65	71	2	2	2	2	1	1
My time was well spent	38	42	42	46	6	7	4	4	0	0
The institute met my expectations	27	30	45	49	9	10	7	8	3	3

TABLE I, Continued

I Feel That:	Strongly Agree		Agree		Undecided		Disagree		Strongly Disagree	
	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
I have no guide for future action	0	0	2	2	4	4	55	61	30	33
Too much time was devoted to trivial matters	2	2	10	11	8	9	47	52	24	26
The information presented was too advanced	0	0	2	2	1	1	65	71	23	25
The content presented was applicable	12	13	68	75	5	5	6	7	0	0
Institutes such as this will contribute little to occupational education	3	3	4	4	3	3	33	36	48	53
Institutes of this nature should be offered again in future years	54	60	28	31	4	4	3	3	2	2

Note: All percentage figures have been rounded to the nearest whole per cent.

TABLE II

ANALYSIS INSTITUTE PARTICIPANTS' RESPONSE AS TO HOW THEY PLANNED TO APPLY THE KNOWLEDGE GAINED FROM THE INSTITUTE

Application	Per Cent of Response in Order of Importance with (1) Being Most Important, (2) Second, etc.					
	1	2	3	4	5	6
Write an article or other publication	5	5	4	10	60	15
Plan meeting for vocational educators in my area on the subject	12	28	24	28	5	2
Stimulate more occupational analysis for curriculum construction	32	36	14	12	6	0
Review more carefully existing curriculum materials	30	27	24	11	7	1
Build a closer link with industry, business and agriculture	12	11	31	36	7	2

Note: Other suggested applications indicated by 2 or more participants of the knowledge they had gained from the institute with the number for each.

Apply knowledge to areas other than T & I.....	6
Plan workshops in analysis procedures for teacher education	4
Develop curriculum materials.....	3
Develop courses in preparation of instructional materials.....	2
Write proposals for curriculum projects.....	2

TABLE III

ANALYSIS INSTITUTE PARTICIPANT'S OTHER COMMENTS

Comments	Number Making Comments
1. TO INCREASE APPLICATION OF KNOWLEDGE FROM INSTITUTE	
Apply techniques to other teacher education groups in our own states.	19
Use more small group techniques on an informal basis to develop a total curriculum	16
Use analysis technique as an administrative tool in evaluating present curricula	4
Send zone analysis materials to each participant, with the material covering his specific area. . .	4
Pass information to other members of staff -- share materials prepared by individual conferees (loose leaf).	3
Provide some experience in participating in construction of "actual" job analysis project . .	2
2. SUBJECT-MATTER CONTENT SUGGESTED FOR INCLUSION IN FUTURE INSTITUTES	
Attempt to build better communications by using multi-discipline occupational analysis rather than just T & I	19
More attention to actual methods used in curriculum development and systems analysis . . .	9
Building curriculum evaluation techniques	3
Wage earning occupations related to home economics	3
Health occupations.	3
Building general education curriculum around vocational objectives	2

TABLE III, Continued

Comments	Number Making Comments
Vocational Guidance	2
Administrative problems in Vocational Education . .	2
Essentially the same -- more emphasis on job analysis.	2

Note: Comments made by 2 or more individuals have been listed.

TABLE IV

STRONG AND WEAK POINTS OF ANALYSIS INSTITUTE AS IDENTIFIED BY PARTICIPANTS TWO OR MORE

STRONG POINTS

Comment	Number Making Comment
Excellent presentations by outstanding speakers	49
Excellent organization, scheduling, and planning	31
Sharing of ideas to stimulate thinking and developing a better understanding among participants	13
Excellent preparation and presentations by discussion group leaders	11
Title of workshop expressed the work done in institute stayed with the one concept	9
Excellent family recreational program	8
Excellent facilities and meals	6
Friendly and helpful CSU staff	6
Good representation of all services	4
Emphasis on new methods	4
Excellent topics	4
Appreciated printed speeches and handouts	4

TABLE IV, Continued

STRONG POINTS Comment	Number Making Comment
High calibar of workshop participants	3
Showing methods of applying material covered in workshop	2
WEAK POINTS	
More time needs to be spent in discussion of application to total curriculum	17
Needed more examples of how analysis techniques can be used in areas other than T & I	10
Group sessions were too large, and they did not allow for individual participation	8
There is a need for better organization and leadership in group sessions - time wasted on elementary topics	8
Lack of coordination existed between group sessions and presentations by speakers	8
Scheduling was too rigid--not enough time to read and consider materials	8
Group meeting accomplished very little (very weak)	7
Speakers' topics were not coordinated well enough--too much repetition	7
Participants' backgrounds in analysis techniques were too diversified	6
Some speakers were given more time than they actually needed	5
Too much time was devoted to zone analysis	4
Visual aid presentati ons could have been improved	4
Too much time on lectures	3
Lack of business and industry participation	3
Need more time on PERT	3
Too much material in p.m. sessions	2

TABLE V

ANALYSIS INSTITUTE PARTICIPANTS' RESPONSE TO STATEMENTS RELATIVE TO BENEFITS FROM INSTITUTE AS EVALUATED THREE MONTHS AFTER THE INSTITUTE

Information Gained at Institute Helped Me:	Number Responding				
	Highest 5	4	3	2	None 1
In making analysis for curriculum construction	25	36	28	9	2
In the further study of analysis techniques	23	38	26	10	3
In utilizing zoned analysis to my field	21	25	25	18	9
In making content analysis of units of instruction	24	34	22	15	4
In understanding the analysis approach to service areas, and special groups, i.e. disadvantaged	22	30	28	16	22
In planning workshops on analysis	13	22	25	13	10
In teaching others how to use analysis	20	20	30	14	12
In construction of curricula	28	26	22	16	4
In teaching others to better construct curricula	20	24	32	13	10
In evaluating curriculum materials	19	31	32	12	5
In planning new instructional programs	23	36	23	10	6
In writing courses of study	17	28	30	13	8
In planning programs for curriculum improvement	17	42	24	10	7
In writing proposals for curriculum projects	12	28	24	15	16
To build a closer link with industry, business and/or agriculture	17	26	28	16	11
To apply concepts of the PERT process	16	16	27	22	16
In my research activities	10	25	25	22	17
In writing articles or other materials	8	22	32	21	16
In preparation of speeches	8	23	29	18	18
By providing a useful administrative tool	18	27	34	9	11
Through new insights and approaches to some of the problems of vocational education	21	37	23	12	6

TABLE V, Continued

Information Gained at Institute Helped Me:	Number Responding Highest 5	4	3	2	None 1
In conveying the concepts and understandings of vocational education to the public	15	24	26	22	10
In working more effectively with other educators	19	34	36	8	3
By providing a guide for future action	25	38	21	7	7
To stimulate others to improve instructional programs	22	31	33	9	3

Note: Since the number of respondents in each case was about 100, the percentage is approximately the same as the number.

TABLE VI

ANALYSIS INSTITUTE PARTICIPANTS' RESPONSES TO PARTICIPATION IN FUTURE INSTITUTES AS EXPRESSED THREE MONTHS AFTER INSTITUTE

Item	Number Indicating Responses Below Yes	No	Uncertain
If you were presented the opportunity to attend a more advanced institute focused on analysis for curriculum construction, would you be interested in attending such an institute under conditions similar to those for this institute?	69	6	24
Would you recommend to your friends in vocational education attendance of such an institute if the opportunity were made available to them?	87	5	7

TABLE VII

ANALYSIS INSTITUTE PARTICIPANTS' COMMENTS ABOUT INSTITUTE THREE MONTHS AFTER INSTITUTE

	Item	Number Making Comment
1.	Good institute -- above average	12
2.	Everything well done	9
3.	No negative comments	2
4.	I am using some of the information almost every day	2
5.	Should have more individual participation	3
6.	Need to have smaller groups for the work sessions	8
7.	Prefer fewer long speeches	4
8.	Have more emphasis on the "Pert" process	6
9.	Do not have so many speakers	2
10.	Have more time for the workshop sessions	6
11.	It will be hard to improve on the institute held last summer	4
12.	De-emphasize the zoned analysis	2
13.	Of all the workshops I have attended this was by far the best	3
14.	Place emphasis on curriculum by analysis and less on zoned analysis	3
15.	Provide more emphasis and drill on occupational analysis	4
16.	Need better small group discussion leaders	8
17.	Relate analysis more to areas other than T & I	6
18.	Might be better not to mix individuals with and without knowledge of analysis in the same group	2
19.	Provide actual doing laboratory sessions instead of lecture-discussion sessions	2
20.	I appreciated the change to participate in the institute	4
21.	The resource people were outstanding	3
22.	Nature of my job does not lend itself to analysis applications	1
23.	Most areas need such an institute	1

"ANALYSIS AS A BASIS FOR EFFECTIVE CURRICULUM DEVELOPMENT"

Dr. C. Thomas Olivo, Former Director
Division of Industrial Education
The State Education Department
The University of the State of New York

I. Philosophical Statements Relating Human Needs to Vocational Education Planning

A. The Prime Resource of a Nation: Its Human Potential

1. National wealth and greatness dependent upon utilizing complete spectrum of human interest, intellect, motivation, etc.

2. Seven major experiences needed by people to serve as productive citizens

a) Capability to communicate

b) Knowledge and understanding of civic affairs and community responsibilities

c) Personal health and hygiene

d) Use of simple basic computational skills and mechanical/scientific principles

e) Relationship of home, family, and community

f) Specialization in preparing as a productive worker, consistent with personal interests, abilities, and desires and the needs of society

II. The Full Spectrum of People to be Served

A. Human resource investment areas

B. Graph of the capabilities, interests, etc., of a representative population

C. Groups of persons to consider in vocational education planning

1. Early school leavers and graduates without salable skills

2. Occupationally talented youth for full time instruction

3. Physically or mentally handicapped needing rehabilitation

4. Unemployed or displaced workers

5. Older workers with obsolescent skills

6. Apprentices and other learners in skilled trade and technical occupations

7. On-the-job instructors, foremen, supervisors and managers

8. Craftsmen requiring updating and upgrading of skills

9. Emergency groups in response to critical demands that develop

III. Work Force Needs Within the Labor Market

A. Economic sectors compatible with educational and training areas of occupational preparation (vocational education fields)

1. Agriculture and related occupations

2. Commerce (business and office occupations and distribution)

3. Home and institutional related

4. Industry (trades, industries, industrial services)

5. Health

B. Employment levels within economic sectors

1. Range from unskilled to highly professional

C. Occupational ladders

1. Entry, intermediate and terminal levels

2. Relationships among basic jobs on the ladder, to related jobs and supplementary jobs

IV. The Centrality of Curriculum Development in Vocational Education Planning

A. Directions of movement for general and specialized instruction (NEA National Committee in Instruction)

B. Concept of curriculum . . . Whenever the term "curriculum" is used, it refers to the sum-total of all the planned teaching and learning experiences in a controlled situation. Conditions are provided so that the learner may master effectively the skills and technologies for employment in a cluster of jobs within an occupational constellation together with the common learnings. This combination of experiences and knowledge within the field of specialization and general education represents a vocational curriculum which makes ultimate success as a worker and as a citizen possible.

C. Aspects of "curriculum building" as representative of greater activity in the whole process

D. Definition of curriculum materials

Curriculum materials in vocational education refer to all the audio-visual sensory teaching-learning materials and devices used by the teacher and/or learner to teach or to master effectively and efficiently the skills, technologies and general areas of learning required as a worker and as a citizen.

E. Classification of Selected Curriculum Materials with Examples

1. Teacher, leader, supervisor, administrator materials

2. Teacher trainer guides and related materials

3. Student, learner, trainee materials, etc. al.

V. Committment in Vocational Education Planning to Human Resource Development

A. Program accessibility . . . geographically and according to capabilities of trainees

B. Vertical correlation and levels of education and training

C. Vocational education as a continuum throughout man's occupational life span

D. Long-range planning within the enlarged area concept and total palnning

E. "Carousel" planned programs with flexibility to achieve measurable occupational preparation.

VI. Human Resource Development Based on Valid Occupational Analyses

A. Analysis as the source for occupational knowledge, labor/management/community relations, needs of work force, etc.

B. Concept of galaxies of occupational constellations

1. Major occupational sectors

2. Major employment/performance levels within each occupational sector

3. Interoccupational relationships

C. Implications of occupational analyses to educational planning

1. Specialization in vocational education fields

2. Interfield curriculum planning

C. Utilizing the material resources of an area in the context of a total vocational education and training program

1. Correlation of on-the-job and institutional training

2. The need for long-range master plans for area programs of vocational education

VII. Concluding Remarks on Efforts to Accelerate Curriculum Effort

A. Feasibility and desirability to accelerate curriculum development effort

B. 1. National, state, and local levels, and internationally

2. Coordination of public and private resources

C. Possibility of conducting massive curriculum building effort which will provide uniformity with diversity, utilizing occupational analysis techniques

CONCEPTS AND PROCEDURES FOR A UNIVERSAL APPROACH TO OCCUPATIONAL ANALYSIS FOR CURRICULUM DEVELOPMENT

Dr. C. Thomas Olivo, Former Director
Division of Industrial Education
The State Education Department
The University of the State of New York

I. Occupational Studies and Analysis

A. Key elements in developing occupational competence

1. Educational planning (curriculum building) attuned to occupational needs

2. Instructors (human resources)

3. Institution on-the-job coordination with ancillary community services

4. Instructional plant and facilities (job material resources)

5. Student capabilities commensurate with job needs

B. Elements of vocational education and training based on analysis

1. Skills and complementary occupational theory, understandings, attitudes, and work habits

2. Related mathematics, science, drawing, art and design, immediately applied to job

3. Industrial, labor, and community relations

4. Occupational safety and hygiene

Note: Such analysis may be used also to make realistic determinations of citizenship needs within an industrialized society.

C. Data gathered in occupational studies

D. Clusters of constellations of job titles in major economic sectors relating to vocational education and training

E. Analyzing job title clusters in a constellation

1. Job levels establish institutional and on-the-job relationships

2. Ranges of educational programs

F. Job titles within a level used as a key to curriculum planning to meet specialized occupational field objectives

II. Coordinated National, State, and Local Curriculum Planning

A. Vertical curriculum coordination at secondary-post-secondary levels

B. Horizontal curriculum articulation for total educational program planning

C. Multi-level program development

D. Experimental and demonstration programs

E. Research and resource centers for curriculum and leadership development and changed teacher education programs

III. The Role of Ancillary Agencies in Vocational Education Planning and Curriculum Development

A. Employment agencies, union, management, labor market analyst, and other personnel oriented to an occupational analysis approach

B. The "Taxonomy" as a broad foundational beginning to an occupational constellation approach

IV. Suggestions for a Program of Action for Effective Educational Planning

A. Feasibility of establishing uniform procedures for occupational analysis

B. Concurrent analysis to establish experiences and knowledge needed to match human needs with societal needs

C. The planning and establishment of a National Professional Curriculum Materials Committee on Vocational Education

1. Composition drawn from separate similar committees for each vocational field

2. Elements of a program within universities to develop curriculum leadership and update administrative leaders

E. Area curriculum research and leadership centers.

OCCUPATIONAL ANALYSIS APPLICATIONS FOR VARIOUS LEVELS: ELEMENTARY SCHOOL, JUNIOR HIGH SCHOOL, HIGH SCHOOL AND POST HIGH SCHOOL -- AN OVERVIEW

Dr. Edwin L. Kurth, Associate Professor,
University of Florida, Gainesville

. . . Occupational preparation may include a variety of subject matter areas which will develop the necessary attitudes, information and skills which will make an individual employable. It includes the problem of how to make the next generation as well as this generation "employable".

Occupational analysis has two broad elements. (1) Competencies the worker has or brings to the job, and (2) competencies the occupation requires . . . . The first element is the one the next generation for employment (elementary and junior high school) can prepare for with proper education. The second is one this generation (high school and post high school) is concerned with as well as the first element....
. . . . . .

. . . Seymour L. Wolfbein, former Deputy Manpower Administrator, advocates providing a complete guidance and counseling program at the elementary school level, because the bulk of the elementary school population reaches critical points of decision without any meaningful background in occupational information or guidance. He points out that by the time they arrive at high school those who will leave before completion are on their irrevocable way to an early exit from the school system . . . .

John C. Flanagan, director of Project Talent, in an articl in the Phi Delta Kappa Magazine for September, 1967 entitled "Functional Education for the Seventies" discusses remedies for the major deficiencies in present educational programs as revealed by Project Talent. He has several major points which apply here: 1. Current K-12 programs make inadequate provision for the very large individual differences to be found in an age or grade group . . . . Programs are especially deficient in providing appropriate educational opportunities for the 30 per cent of children in each age group who fail to complete the twelfth grade; 2. Make planning and preparing for an appropriate occupational role an integral part of the educational program; and 3. . . . formulate detailed educational objectives in terms of behavior changes anticipated. We must prepare youth for the future.
. . . . . .

. . . Bruner in his book on The Process of Education comes forth with the basic assumption that intellectual activity is everywhere the same, whether at the frontier of knowledge or in a third grade classroom. Any difference is in degree and not in kind. He maintains

that the foundations of any subject may be taught to anybody at any age in some honest intellectual form. He suggests that the curriculum is determined by the underlying principles of a subject which give rational structure to it. . .that there must be a relationship between what he needs to learn in the future. He must learn how to learn . . . In short, to learn subject matter structure is to learn how things are related. This is also true for occupational education. Acquired or accumulated knowledge within any relationship to the fundamental structure or without applications is likely to be forgotten.

An example of what we are talking about here is a spiral curriculum which will insure continuity and sequential learning of subject matter which is related to student interests and needs. Thus, instruction in mechanical or technical or scientific ideas, even at the elementary level, can be geared towards motivating the child into the next stages of development.

Bruner in another publication on Theory of Instruction written in 1966 has further applied the learning by doing approach to elementary grade levels by advocating teaching children to use tools. The philosophical approach to the nature of tool using is basic to his theory . . . . . .

Our ultimate object in teaching about tools is, as noted before, not so much to explicate tools and their significance as to explore how tools affected man's evoluation and still affect his life . . . .

Kransberg and Pursell in their text on Technology in Western Civilization bring in another element appropriate for elementary grades. "Technology, then is much more than tools and artifacts, machines and processes. It deals with human work, with man's attempts to satisfy his wants by human action on physical objects."
. . . . . .

What can be the application of occupational analysis to elementary education? First, I would like to define the term occupational as I will use it here. Occupational is a broad term which includes any task for which a person has prepared himself to earn a living. Preparation for an occupation may include industrial arts, technical, semi-professional and professional education. Analysis is the separation of anything into constituent parts or elements for determining its make-up.
. . . . . .

The 1965 M. I. T. Summer Study of Occupational, Vocational and Technical Education reemphasized the need at the junior high school level for new patterns of learning, new materials, teaching aids, and teacher education which would lead toward more participation in meaningful education for more students.
. . . . . .

Action was recommended for developing new curricular patterns and instructional materials starting at the junior high school level and including teacher education. Also, the establishment of an institute of educational management, patterned after the best schools of industrial management and business administration.

. . . . . .

A new concept for the organization of instruction for vocational and technical courses has emerged during the past couple of years. Some educators have recommended preparing for a cluster of occupations which would provide skills which are closely related to a major occupational group rather than to one specific trade.

Cluster is a method and not a course title. It is not new. Dr. Frank of M. I. T. suggested it for technical education . . . .

Cluster training has applications at both the senior high school level and in post high school programs. Lane Community College at Eugene, Oregon, has worked out an alphabetical listing of occupational clusters for which suggested core curricula in the high schools are spelled out.

. . . . . .

In post high school as well as in high school programs the closer the preparation program goal is to the time of job placement the more specific the content must be. This is not a contradiction to the cluster concept but a refinement within an occupational cluster. An example of a cluster at the post high school level is in the U. S. O. E. Electronics and Electricity Guide. High school and post high school students, the latter representing a wide range of age and education, are the "now" generation who have immediate needs for occupational preparation or up-grading of skills. Preparation programs for these groups must be concerned with the worker competencies but especially with the job requirements set by those doing the hiring. On the basis of the overall manpower needs of industry, descriptions of occupations must be available. In an occupational description may be such items (1) where will he work, for whom, under whose supervision; (2) what does he do; (3) what must he knowl (4) how many levels are there in connection with the job; (5) are there related jobs requiring more or less preparation; (6) what are the physical requirements; and (7) what are impending job changes and what agencies can provide additional training; and (8) are there licensing requirements.

When these and additional questions about occupations and industry needs and educational agency programs are answered then the educator is ready to develop a curriculum and a specific course of study. On the basis of the occupational analysis, the specific jobs can be analyzed.

CURRICULUM DEVELOPMENT PROCESSES FOR TODAY AND TOMORROW WITH BROAD PROCEDURES FOR DEVELOPMENT OF THE COURSE OF STUDY

Dr. Edwin L. Kurth, Associate Professor
University of Florida, Gainesville

The topic this morning has two basic terms which require definition so as to establish a base of reference . . . .

> Curriculum: A systematic group of courses or sequence of subjects of appropriate types and length arranged in proper sequence to prepare students to attain defined goals or objectives.
>
> Course of Study: An outline of experiences, skills, projects, demonstrations, related information and methods involved in teaching a school subject covering a specified period of time.

Another term which is closely related although not used in the title is:

> Program: A plan of procedure -- a type of curriculum.

Other terms used in conjunction with curricula and courses of study are:

> Objectives: Those general purposes pursued over a long period of time. They are usually not stated in quantified terms. They are more or less permanent and they require the establishment of goals which when fulfilled will achieve the objectives. (Objectives of occupational education might be to produce a labor force with the skills and competencies necessary to contribute to economic growth, to reduce unemployment, to prepare to disadvantaged for employment or to provide equal opportunity for employment through occupational education.)
>
> Goals: These are set for specific periods of time and are usually quantified. Goals for occupational education can be stated in terms of the number of students who should complete a program, the number who should be placed in employment or the number of laboratories or shops to be provided to prepare workers.

Curriculum and courses of study are usually associated with an educational process or an educational system which is the result of

what the particular culture or the society has provided to perpetuate its way of life. Consequently, curriculums and courses of study reflect what society expects the schools to provide and teach to meet the needs of its citizens.

. . . . . .

. . . Curriculums and courses of study must also be based on facts from which valid predictions can be made. One of the most used methods of obtaining facts from which to develop curriculums are surveys.

Surveys are usually of four types: (1) A community survey of the principal jobs or occupations in which people of the community are employed. A complete community survey should include interest surveys of in-school youth, out-of-school youths, adults, or combinations of such populations. The number of persons in training, in public and private institutions, on-the-job training in industry, and the general and specific educational level of the population is very useful. This will give an indication of who may be eligible or capable of further education, those now under-employed who might change jobs, as well as those who need special programs. (2) The survey of an industry. All the jobs or occupations within a given industry such as the construction or boat building industry. It needs to be quite complete to show the need and opportunities for related occupations within one industry such as draftsmen, carpenters, masons, electricians, plumbers, and skilled mechanics to name just a few. (3) The survey of selected occupations. A survey of a number of occupations such as stenography, auto-mechanics, electronics technicians or municipal services. It is not as complete as a community or industry survey. (4) The survey of a single craft or occupation. This is a survey of a single craft or occupation such as air conditioning and refrigeration, radio and television repair and servicing.

If the final purpose of the survey is to determine whether and what preparatory programs are needed in a single occupation, or several; or in an industry or a community, answers for specific questions must be found. These questions must be converted into objectives and goals, priorities for achieving them established and procedures initiated to reach them.

. . . . . .

From the information a survey gives and as a first step in translating the need for prepared personnel into curriculum content, the jobs for which people are needed must be described. A job description is a general statement about what a person on a job does and the basic conditions under which he does them. It does not include a description of what he must know.

. . . A task is usually defined as a related set of operations required to achieve a job objective. It is one element of a complete job.

After the tasks are listed the next step should be to list the processes or steps which the worker has to do to complete a task. . . . From such a list time allocations can be made for teaching what is important but easy to do or important to the job but difficult to do. Along with this can be listed the things the worker must know in order to be able to do the manipulative operations and processes.

From the preceding job descriptions, operations, and processes, the objectives for the course can be drafted. . . .

The next step in curriculum development after the total content needed has been determined is to assess what the learner brings with him to the program or what prerequisites are needed, what he will learn on the job after he starts working. The difference between the two is what will be the curriculum content.

To this content then must be applied the principles which underly all curriculums. These are in general:

1. Title must be easily understood.
2. The content range is suitable for the program planned.
3. A substantial portion of the content is occupational
4. Content is of appropriate difficulty level for prospective students.
5. It is feasible to secure needed equipment and instructional materials.
6. The content is built around suitable and established entrance requirements.

The curriculum controls which will affect the program are:

1. Total permissible length of the program.
2. The number of terms, semesters, or units of time allocated.
3. Core courses required of all students.
4. General education requirements, courses, or credit hours.
5. Policies and practices concerning electives.
6. General entrance requirements of the institution.
7. Class schedules -- term lengths, periods per day, block scheduling, etc.

8. Certificate, diploma, or degree requirements.

9. Potential for securing needed equipment and instructional materials from institutional sources, local industry, or other agencies.

. . . The course ourtlines have a format which assists in achieving the objectives of the curriculum for both the student, the teacher, and to add another element, the institution in which the curriculum will be offered. A suggested one is:

1. Title Page (the course title, institution, department, instructor)

2. Preface (rationale and setting for the course)

3. Table of Contents

4. Objectives and goals

5. Course Content -- Subject matter sequence. (This will be the major portion of the outline.)

6. Methods you plan to use. (e.g. lectures, demonstrations, experiments, problems, etc.)

7. Student activities (e.g. readings, notebooks, reports, field trips, observations, projects)

8. Instructional Material (e.g. textbooks, periodicals, information sheets, audio visuals, etc.)

9. Evaluation procedures (e.g. projects, reports, tests, demonstrations)

10. Bibliography for the instructor and the students.

. . . . . .

THE CHANGING PATTERN OF MANPOWER UTILIZATION AND ITS SIGNIFICANCE FOR OCCUPATIONAL EDUCATION

Dr. Maurice Roney, Director
School of Occupational Education
Oklahoma State University, Stillwater

The subject of my discussion today is change -- changing job requirements and changes in occupational education. If we can predict the future from experiences of the past, we can be certain of two things: Changes in technology will be made at an ever-increasing rate, changes in education will be slow and will be resisted . . . .

It has been said that the amount of scientific work being done has been doubling every 20 years. But it will double again in the present decade. The direct result of scientific discovery is an expansion in technology. For the most part, this expansion in technology has been and will continue to be accompanied by new techniques of production, distribution, and marketing, with new requirements for construction, repair, and maintenance services.
. . . . . .

The pressing need for a better system of occupational education has been recognized, however. Sociologists, economists, and of late even academicians, are calling for reforms that, hopefully, will provide a better balance in our educational system. The present imbalance, resulting from years of concentration on the college preparatory function of our public schools, has at long last begun to receive attention . . . .

Perhaps the most significant change is the shift from manual to cognitive skills, accelerated by the shift to automation. This is reflected in the amazing spectacle of industries hiring new employees through the front door and, at the same time, dismissing employees through the back door.

A second significant change is the shift from production to service occupations. In 1900, 70 per cent of the work force was engaged in production work; by 1960, this percentage was less than 40. In the period from 1960 to 1975, the number of service workers is expected to increase by 50 per cent; an increase second only to the projected 65 per cent increase in professional and technical workers.

A third factor is the increased mobility of workers. This is especially significant in the technical and professional occupations where job opportunities are influenced by fluctuations in government contract work. One out of five families in the United States move every year. A fifth of these move to a different state.

Vocational and technical education is certainly affected by the three factors of technical complexity, increased demand for service workers, and occupational mobility. I would like to give particular attention to the first of these three, especially as it relates to the full-time preparatory programs offered in high school and in post-high school institutions. Our greatest challenge in education lies in devising occupational training for the young people who will be entering the work force in the coming years.

. . . . . .

These two factors, (1) the inevitable shift toward a new value system in which functional knowledge is a commodity and (2) the needs of people for broad rather than narrow skills, have a tremendous significance for all of us in education. For our present educational services do not meet the needs of this kind of society.

. . . . . .

. . . Any educational program that proposes to prepare a young person for today's and tomorrow's world of work must, I believe, do three things:

1. It must prepare the individual for an entry job (or one of several such jobs) Where he can be productive with a minimum of on-the-job orientation.

2. It must be broad enough to enable the individual to advance to positions of increasing responsibility.

3. It must enable the individual to continue to study in his chosen field.

. . . . . .

Despite all of the evidence that change in education is inevitable, there is enormous resistance to new ideas. Traditional concepts are much more comfortable. Industrial educators are probably neither more nor less reactionary than their counterparts in the academic disciplines. All of us tend to find reasons for opposing the new and different. Someone has made the following list of the negative responses to suggestions for change:

(1) It costs too much

(2) It will set a new precedent

(3) We haven't proven that the old could not be made to work

(4) We have no assurance that the new will work

(5) Let's wait until it has been tried out elsewhere

(6) It is just another fad

(7) The situation here is hopeless

(8) The time is not ripe for change

(9) The idea involves a controversial issue

(10) It will not be understood

(11) The idea may be good for others but not for us

(12) Our people are not prepared to handle a new idea like that

(13) There is too much risk involved

(14) The idea would disturb our status structure; it is a threat

(15) The change benefits one part at the expense of another

(16) This is just another imposition from on high; authoritarian

The challenges of occupational analysis in modern industry are enormous. But the problems of incorporating the results of occupational analysis in new programs are equally formidable.

OCCUPATIONAL ANALYSIS IN AN EMERGING FIELD

Dr. Maurice Roney
School of Occupational Education
Oklahoma State University, Stillwater

Occupational education is based upon the premise that the factors contributing to success in an occupation are relatively well known and can be converted into certain educational experiences. Over the years those elements which develop occupational proficiency have been identified and continually modified to meet changing occupational requirements. In recent years the trend has been toward post-high school services. Specialized education beyond the high school is rapidly becoming a condition of employment for many industrial occupations. Post-high school technical education services have increased to meet this demand at the rate of approximately 20 per cent per year since 1958.

Along with the extension of occupational training into the thirteenth and fourteenth years of school, significant changes in instruction have evolved. The emphasis in occupational education has shifted from manipulative to cognitive skills. Technical education programs with a broad base of mathematics and science have been developed to prepare persons for employment in well established fields of technology . . . .
. . . . . .

The design of technician education programs has always been a complex and many-faceted problem. It has never been simply a matter of assembling a core of conventional courses and adding a few specialized offerings. . . .

The problems of curriculum design become doubly tough when occupational requirements make it necessary for technicians to have basic training that courses established fields of specialization. Some of the rapidly emerging technician occupations require various combinations of skills in electronics, mechanics, optics, fluidics, pneumatics, and chemistry . . . .

Electromechanical technology is one of the new cross-disciplinary fields. There is reason to believe that, as an occupational field for technicians, it may soon overshadow some of the long established fields such as electronics and mechanical technology . . . . . .

Planning the Field Study

A Panel of Consultants with national representation provided advisory services and assisted in planning and conducting the field study . . . .

The consultants were given an extensive briefing session on the general form of technology curriculums. This step is extremely important. Industrial personnel are generally unfamiliar with the procedures and processes of specialized occupational education programs . . . .

Conducting the Field Study

The field study was conducted in two parts. The first part consisted of an in-plant study of the electromemchanical technician occupations to determine what skills and knowledge combinations are required and whether or not existing educational services are providing these requirements. Depth interviews were held with administrative and supervisory personnel in 26 selected industrial organizations. These organizations ranged in size from 50 employees to more than 35,000 and were geographically distributed from New England to California. The field interviews identified an immediate and urgent need for individuals with a background of education and training significantly different from that obtained in existing teachnical education programs . . . .

. . . . An interview schedule was used but no attempt was made to obtain a set of answers to a rigidly structured information form. Rather it was thought more important, at this stage, to rely on the researcher's background experience in curriculum planning and technical teaching to interpret and record responses as objectively as possible. The principal advantages of this procedure was in establishing rapport with the industrial representatives involved. Also it conserved valuable time, an important consideration when busy administrative personnel were contributing to the study.

The need for equal attention to mechanical and electrical principles throughout the training program was underscored by employers. The systems and devices with which these technicians work are often extremely complex electrical-electronic-mechanical combinations. . . . Throughout the field study employers emphasized the critical need for persons who feel equally at home in each of these elements.

. . . . . .

The second part of the field study obtained a measure of the quantitative need for technicians with electromechanical training. A

mailed survey was used to obtain information from 93 organizations employing technicians who work with both electrical and mechanical devices and systems. These 93 organizations expect to employ 20,329 additional electromechanicsl technicians by 1970 - a total 53 per cent greater than their combined need for electronic technicians and mechanical technicians.

LABOR MARKET INFORMATION

Leon Lewis
U. S. Department of Labor
Bureau of Employment Security, Washington D. C.

All of us have a habit of developing a jargon or speech in terms of our own specialty. This is true in my work and I am sure it is true in your work. I hope that this doesn't cause confusion in the remakr I wish to make; but in government, speech is something you become adapted to; you also build on and you develop. After a while the speech gets very esoteric. I would like to illustrate this before going into the subject matter. Webster's will tell you the word esoteric is designed for and understood by the specialty alone. That is why in your conversations I am sure you understand what I am saying and in my conversation, they tell me I am the only one that understands what I am saying.

. . . . . .

I would like to interweave both of my topics and make it one "big ball of wax". In order to understand occupations, they don't sit by themselves in the vacuum in outer space or on top of one of the mountain peaks; they exist in terms of the labor market. And the labor market is whatever you will. It is a metropolitan area, it is a town, it is a city, it is a state, it is a region, it is a whole country. For your purpose in the field of vocational education you are sort of bounded by political lines in terms of the state or the county or the city or a group of counties. In terms of the labor market it doesn't know such artificial boundaries. In New York City the labor market consists of New York City, the suburbs, New Jersey and that spreads across two states. Be that as it may, we will picture the labor market in terms of an economic and a political boundary.

. . . . . .

There are three major groups that put out information that is worthwhile on the labor market. They are the Bureau of Census, the Bureau of Labor Statistics, and the Bureau of Employment Security. The last two groups are in the Labor Department. The first group is part of the Department of Commerce. The census is a unique organization. It has to make a census every ten years because this is established by law. There is a law now to make a census every five years. The country grows too fast; why wait ten years to find out what has happened? And so, census makes intermediate or interim type surveys between the five-year census but that is the only major body of information that tells us what the population of the country does for a living. Now there is such a thing as continuity. You would like

to know from 1960 what people did in 1950. You would like to know in 1970 what that is in relationship to 1960 and 1950, so that the structure within which they identify a report of occupations has a certain rigidity. Be that as it may, this is fairly good.

. . . . . .

If the rearrangement of our activities and if the funding goes through, we hope to be able to make available through each of the state employment security agencies and to the state vocational education agency the labor market picture for the year and for the future. This would be part of a package that could then be transmitted to the Office of Education in terms of where we are going. The nature of the information would be on occupational requirements for vocational education. There would be three basic types of information: the hard-to-fill occupational needs in the community and the state, the future labor demand projections, and a summary of the labor supply situation in the state itself.

. . . . . .

. . . Now we know the Office of Education has systematized vocational education curriculum programs. An interesting question has always been, what are the specific job objectives to which these curriculum items lead? You can name a curriculum and they rattle off one or two, and you name another and they rattle off three or four, after a while you are running short because we have estimated there are 35,000 separate jobs in the economy, give or take 32,000 . . . .

Well, using funds that were available, a joint project was given to the Wisconsin vocational educators in the state employment service to attempt to run up tables that would identify the vocational curriculum courses, on one side. And on the other side identify the job or vocational objective, the specific occupations to which this training would lead. Now the only document of its kind in the country which would treat this in the standard language is the Dictionary of Occupational Titles. And so these are identified in terms of the Dictionary of Occupational Titles and codes. It is the code numbers in the dictionary, which is part of a classification structure, that is the basis for statistical reporting out of the Bureau of Employment security. This one document becomes very strategic in the world of vocational education. Those of you who may not think it is today will probably think so tomorrow or the day after that or even after you retire it will probably come to pass.

. . . . . .

We have for years been working on the problem of job contents through job analysis. We identify the job, we do a detailed analysis of the task, the work performed and activities. We identify the skills, knowledges and abilities required to perform that job, the training involved and the employers hiring requirements . . . .

. . . The job exists in terms of a worker or a person or a human being and so you have to take the human into consideration . . . .

. . . We set up committees first to identify what are these factors, the worker trait factors, that are significant in terms of work activity. And here by using the best brains in the country, that is the best brains at that time, we identified the following interests: temperament, aptitudes, training time, physical demands, working conditions, as the significant worker type factors and an impact on work activities.

. . . . . .

Now, in the job analysis aspect to recap, we only do a detailed identification of the job work activities themselves but identify the worker functions in terms of the activities identified in terms of a systematized work field, materials, products, subject matter, services the significant interests, temperaments, general educational development, specific vocational preparation, aptitudes, physical activities, and environmental conditions.

We estimate these characteristics in terms of actual job activities and from what we are able to identify what we believe are realistic minimum hiring requirements. But in addition, we get from the employer his hiring requirements in terms of education and training at the elementary and high school levels, subjects of courses, whether it is college, whether it is vocational education or apprenticeship or job training, whether the employer insists for his particular job you must have experience on other jobs, whether it requires licenses from that individual plant, whether this job is a promotion from something or you can transfer it to this from something, or you can be promoted up from this to something else, the kind of supervision received and the other standard items such as the machines, tools, equipment and work aids involved in performing this job. We also identify terms or jargon which is peculiar to that plant or type of job activity. And then we let the analyst use his judgment by putting in any general comments he thinks may be suitable without telling you where to go.

. . . . . .

I feel that if I explain the new dictionary, that in itself will explain our new concepts in job analysis and give you a better understanding of what happens in the world of work and how that could possibly relate to vocational education and word "vocational" automatically puts it back into the realm of the world of work.

. . . . . .

That is the Dictionary of Occupational Titles. In there you saw a reflection of advanced job analysis research. I hope I have been able to show you that the worker trait characteristics are as important as the actual job or work performed. Each characteristic with the possible exception of interest and temperament have a direct impact if properly identified in vocational curriculum.

OCCUPATIONAL TRAINING FOR YOUTH WITH SPECIAL NEEDS

Xen S. Hosler
Vocational Education, Jefferson County, Colorado

I. Objectives

A. To provide an opportunity for socioeconomically handicapped students to receive the vocational education opportunities they need.

B. To help students with special needs make the transition from school to productive employment through an occupational work experience program.

C. To provide special students with basic education believed to be necessary to succeed in a job which they are capable of performing.

D. The occupational work experience program is meant to serve the youth with special needs -- those who cannot succeed in a regular vocational program but can succeed in an occupational work experience program.

E. The occupational work experience program will contribute to a desire for the student to become a productive citizen. This can be attained through a combination of suitable on-the-job employment experience and special academic work.

II. Program Defined

The occupational work experience program will be a planned program either on a one or two year basis to help the limited ability student to find a permanent place of employment at the low-skilled, semi-skilled, or operator level.

III. Student Eligibility

Any student, boy or girl, 16 years of age or over who has been identified by guidance counselors, who cannot succeed in the regular academic or vocational programs may be considered for this project. Students eligible for special education classes due to mental or physical handicaps may not be enrolled. Enrollment should be limited to those approved as a special needs youth by counselor, principal and teacher coordinator

of the program. They must be behind their grade level to the extent that it is not possible in any way to keep up in the regular academic or vocational program.

IV. Approved Occupations

Only occupations of limited skill requirements, either physical or mental which normally can be mastered in less than 1,000 hours can be utilized in this program. No occupations usually considered skilled, such as apprenticeable, or which are offered in the regular vocational skilled or technical program should be approved.

V. Description of the Course

This course will be operated in such a manner that the student will be provided a minimum of two to three periods per day - five days a week classroom instruction in specially prepared remedial curriculum and one additional period daily will be devoted to occupationally related instruction. This will be taught on an individualized basis according to the needs and capabilities of the student. Credit will be granted for this instruction. The student will then spend the rest of the day in a supervised occupational experience program designed to prepare him for full-time employment until such time as the teacher-coordinator places him in a regular employment situation. The student will receive credit for the work experience. The ultimate goal of the course, whether one or two years duration, is to place the student in a full-time work situation as a productive citizen. The occupational experience program could be provided in an institutional type program.

VI. Qualifications of Teacher-Coordinator

A. The teacher-coordinator of this program will be chosen because they have a deep desire to help students having academic and socioeconomic handicaps.

B. The teacher-coordinator shall hold a regular teaching certificate, have at least three years of successful teaching experience, and have a minimum of two years of successful employment experience in the world of work. In some cases outstanding work experience may be substituted for teaching experience. He must be approved by the State Board for Vocational Education.

VII. Course Content

The curriculum for the academic and related parts of the student's training will be prepared in cooperation with local educational agencies and the State Board for Vocational Education.

Some areas of instruction may be as follows:

Remedial reading, math, communications or social studies (topics necessary to equip the student with the skills needed for his occupational choice)

Speech

How to Interview for a Job

Filling Out an Application

Employee-Employer Relations

Human Relations

Personal Grooming

Job Safety

Personal Finance

Individual Assignment

VIII. Evaluation

The program will be continually evaluated in terms of:

1. Progress in training (student, teacher, employer)
2. Placement
3. Follow-up
4. Course content

Evaluation of the pilot program will be done on an individual basis using the following methods:

1. Pre-tests will be administered at the beginning of the school year in the academic subjects to determine grade placement level of the student.

2. Post-tests will be administered at the end of the year to measure grade level advancement.

3. The student vocational interest survey will be administered at the beginning of the year, as well as the General Aptitude Test Battery, to determine student interest and aptitude. The coordinator will match student interest and aptitude will a

4. Individual students will be interviewed at the end of the year to see if they are pursuing their career objectives as a full-time productive citizen.

5. The number of students completing the program will be measured against those that would normally drop out to see if the dropout rate has been lowered.

ANALYSIS APPLICATION TO MEET REHABILITATION NEEDS AS A PART OF THE BROAD TOPIC - OCCUPATIONAL ANALYSIS AS THE BASIS FOR CURRICULUM DEVELOPMENT

W. C. Weidner, Deputy Director
Colorado Department of Rehabilitation
Denver, Colorado

. . . . . .

. . . Since the beginning, rehabilitation has been vocational in nature, and to this day, the third criteria for eligibility is reasonable expectation that the applicant can be made employable, with the other two criteria being (1) the existence of a physical, mental, or emotional disability (2) which constitutes a vocational handicap -- a handicap to employment. During some twenty years in rehabilitation, I have seen many exciting changes; however, one of the things that has given me a great deal of pride in the program has been the fact that the goal of rehabilitation was to put people on a job they could do. Today, I see within the movement a group of sincere people who seem to be advocating services for the sake of service.

. . . One of my observations has been that people who suddenly become disabled quite often tend to achieve, at least vocationally, at about the same level as they did before disability. I know many of you are disagreeing with that statement because of the many cases you know who have overcome the shock of disability and have gone on to greater things. Yes, there are those too, but the point I wish to make is that people with disabilities need the same type of assistance as people without disabilities because they first are people -- and then they are people with disabilities.

. . . Therefore, in my opinion it behooves every training and educational facility to provide an outstanding vocational guidance program. People -- all people -- disabled or not, must be provided opportunities to discover their abilities and capabilities. Once an individual's capabilities are known, then the rehabilitation counselor must put into play all the skills he has in the use of his knowledge of occupational information.

Incidentally, a great deal of time must be spent on detailed job analysis when you are working with the handicapped. One of our own concerns lately has been the apparent lack of knowledge in the field of analyzing jobs on the part of the people we hire. We really don't care whether they use the square methods, the circle method, the physical demands method, the psychological method, or the try and see

method. We do feel that they cannot do the job they are supposed to do for handicapped people unless they have the abilities to analyze what employees do on individual jobs in the work world. . . . . In rehabilitation we used to feel that there are so many fields in which a man can work; therefore, never put him in a job or a field where his disability will be a handicap. There have been many changes in rehabilitation, and today I don't believe there are too many employers insisting on perfect bodies or minds before they hire. When a disability no longer limits a person occupationally, does it need to be thought of as disability. . . .

. . . Rehabilitation is not interested in seeing that long lists of occupations are developed which are considered suitable for a specific type of thoroughly evaluated individual client and a complete job analysis has been made on the occupational choice, mutually considered, where does the client go for the kinds of services needed to achieve his vocational objective? In On-the-Job Training the only resource open to him or can he obtain what he needs in private schools, in public schools -- at the high school level, at the trade school level, at the college level?

Yes, we in the rehabilitation movement are looking for educational opportunities where the curriculum is strongly based on job analysis. People with disabilities need an opportunity and equipment to supplement theory with doing. They need an opportunity to practice in situations where their abilities may compensate for their losses.

Educational curriculum should and can be based on job analysis which, when combined with general education, will eqluip people finishing a training or educational situation so that they will at least have had expert help in arriving at where they are going vocationally, and have had the opportunity to develop some of the skills they will need in the work world.

. . . . . .

I have said little about how to use job analysis in building a curriculum -- primarily because I am not a curriculum builder. The needs of people with disabilities, I do believe I understand -- and so far as I am concerned, they have the same needs as those of all people. There must be an early recognition of individual differences in any training program. There must be an acceptance, in this country at least, that most achievements are based upon good judgment in selection, and opportunity to learn skills needed for work. In addition to a curriculum based on job analysis, an educational system must build its buildings so that it is available to people with disabilities and other differences. Ramps must be provided for people in wheelchairs, methods of instruction must be varied to assist people with various disabilities. If the educational system insists upon a quality curriculum based upon both job analysis and general education, then special attention to disability may cease to be a need sometime in the future.

ANALYSIS AS A BASIS FOR CURRICULUM DEVELOPMENT

Frank H. Wimer - Director
Trade, Industrial and Technical Education
State Division of Vocational Education
Olympia, Washington

In Vocational-Technical Education, the goal is that of successful employment in an occupation suited to the needs of each individual. Successful employment means that the industry recognizes the knowledges and skills the student brings to the situation and feels that the student can make a contribution in the industry. The success or failure of the educational program, then, is directly related to the performance of the individual in the industry. This would indicate that the industry has standards of performance that are necessary to be attained in order for the person to be successful.

Curriculum planners are confronted with a major problem in attempting to develop education and training programs when a valid analysis of the functions to be performed is not available. It is possible to design a good instructional program only when the end results are clearly stated. "If you don't know where you are going, how can you plan the route?"

One of the problems in Vocational-Technical Education has been a lack of communications between industry and education. The performance standards required by the industry have not always been communicated to the educational world. Vocational Technical Education must be based on the standards and the quality control required by the industry, and we cannot provide appropriate educational services without these standards. But, if we have the standards, we have a much better chance of providing a qualified final product: the student who is acceptable to the industry.

Over the years, there have developed a number of various ways to make an analysis of the occupation to be used as a basis for curriculum development. Most of these analysis methods are applicable and work very well when applied to the manual skills areas. However, many of us have been confronted with the problem of making analyses of some of the technical occupations, upon which to base development of curriculum. We found that our present methods somewhat fell short. Secondly, we were faced with the problem of teaching "analysis techniques" to instructors of technical occupations.

During the past several years, teacher educators and others have asked the question, "What are you doing in the course on occupational analysis?" and "How are you handling the analysis as it

related to the technical occupations?" The typical answer is that, "We are trying to use the well known methods, but we're having some problems." In working with various advisory groups throughout the State, we find there is a problem of communication and, in many cases, we do not get appropriate information on which to base a quality program.
. . . . . .

The State is developing the total system. We believe that this system will never be complete; that it will have to be continuously modified as we find new methodology and learn more about system concepts. And that perhaps others will be able to take these ideas and add to them, modify them, with the end result being better Vocational-Technical programs.

In this system the State, the schools and the industry, both employees and employers, will cooperate in the development of training requirements and specifications for the particular occupational field. The industry will provide information and other source documentation such as job descriptions, major functions performed, charts showing structure, processes, etc; the State, the schools and the industry will work together to develop a training requirement and specifications document, which is really a Function Analysis along with terminal performance objectives.

The analyses document will then be validated by a state-wide committee made up of workers and supervisors of workers who now work in the field being analyzed. This committee will validate and make modifications in the document. They will also make recommendations for each objective as to who should be responsible for teaching to that particular objective, industry or education. In some instances, it is impossible for the school to teach to an objective because of costs of specialized equipment, etc. But we feel it is important to get agreement as to who is going to assume the responsibility. The agreed upon document requirements and specifications, is then used by local schools to develop their program.

The schools, in cooperation with local industry and using these state-wide agreed specifications, develop a training program plan with necessary documentation. This plan then is reviewed and validated by the local industry or agency (the local advisory committee.) This is a cooperative venture in which the industry assists the local school in the development of an appropriate plan based on the state-wide analysis as modified to meet the needs of the local area. It is at this point that the local industry and education agency can get agreement as to the local needs and conditions and make appropriate modifications, additions, or deletions. There may be certain things in the statewide document which do not apply in the local area and a decision should be made as to whether or not these particular items should be included. They may also find certain

local conditions which are not normally experienced state-wide. These should be fed into the system, and into the training plan. Although the product (student) is mobile, care should be taken to assure that local needs are being met in the local training program.

Upon completion of development of the training program plans, the school will then implement and conduct the training. The graduate will go to work in the industry and follow-up information will come from the industry to the school to assist the school and the Advisory Committee to modify the program to better meet the needs. It is very important that a follow-up system and evaluation procedure be agreed upon and be implemented at the time of the discussion of the standards of the program. Results of the evaluation process and other follow-up information will come from the schools to the State to assist them in modifying the system, modifying the standards, etc., and to bring the procedues and standards up to date.

. . . . . .

We realize that such an analysis is a major undertaking and that industry cannot be expected to carry the whole load. Therefore, in the State of Washington, we are developing this method of function analysis of occupations. We would urge there be a national effort in a direction which attempts to accomplish some of the objectives we feel are important.

. . . . . .

In making the analysis, there should be no concern as to how the training is to be accomplished. Ideally, the analysis with the objectives or this prescription for training would be developed within the industry itself and be given to the educational agencies to be filled. However, we know that this would be Utopia and it will probably not be accomplished in this manner. It is, however, imperative that those making the analysis be knowledgeable in the industry, know how it is operated, know the standards required for entrance into the occupation, know the occupation, know the terminology used by the industry, and finally, be willing to accept an industry evaluation validation and modification of the document produced. We feel that the analysis can be best made by a group of knowledgeable instructors who are recently from the industry, along with a few members from the industry who can assist the group in staying on the right track. There must be a continual probing, digging and questioning to be sure that what is written is what is really meant and that it is written in a manner which allows it to be communicated to both educators and industrialists who are knowledgeable in the field. The analysis generally covers a broad field, and is not of just one specific job classification. At any point in time when it is evident that the functions or tasks are performed by an engineer or someone outside of the field or outside the job classifications being analyzed, it should be so noted and the analysis not carried any farther on that particular item.

The preliminary analysis document will identify the major functions and identify sub-functions under each to a level sufficient to allow easy discussion of specifics. It separates these functions and shows the relationship of each. It gives a definition of the function. It gives reasons why the function is needed and provides a task description of the tasks required when the function is performed. For each task, one or more terminal student performance objectives are written, performance objectives as required for the entry worker. It is from this document that instructional content and methodology can be developed.

. . . . . .

OCCUPATIONAL INFORMATION FOR JUNIOR HIGH SCHOOL STUDENTS

Dr. Charles E. Weaver
State Supervisor of Guidance Services
Ohio Department of Education, Columbus, Ohio

Another title for this paper might well have been, "Find Out Where The Action Is!" Certainly a chief goal of an on-going guidance program is the provision of accurate and up-to-date information relating to the world of work, relating to the making of educational choices, and relating to considerations of how to solve personal and social concerns in the best possible way . . . . Thus, it immediately becomes clear that guidance is for all students. This is true whether they be scholastically gifted or economically advantaged; whether they be scholastically or economically average; whether they be scholastically or economically disadvantaged; whether they be white, black, red or yellow; whether they live in suburbia or whether they live in the bowels of the inner city. Guidance is for ALL students. . .

. . . . Mrs. Mildred Collins Blondis, a psychologist at Willowick Junior High School near Cleveland, in a presentation entitled, "The Counselor Affects the Curriculum" at the 1965 All Ohio Junior High School Guidance Conference stated that, "First of all, he is a person." Many adults sometimes tend to forget that junior high school students are people. Junior high school students are not always sure of this themselves. They generally are not clear about who they are, and are often unsure of the meaning of their thoughts. Sometimes they spend a great amount of time trying to develop satisfying beliefs. They are at varying stages of "becoming."

. . . . . .

A common problem faced by counselors in working with the junior high school student is to help him in his struggle to obtain some independence from his parents and to establish himself independently. As you know, this is often a matter of trial and error, and does take time. An adolescent may make a bold effort to become independent and to do something on his own . . . .

A perplexing problem for adolescents is the difficulty of establishing a cooperative relationship with peers, and the failure to achieve status. They have a need to fit into the group, the need to do the same things, the need to think the same things, and the need to look like other people . . . .

. . . . . .

At this age the adolescent is concerned about his self-concept and sex identification. His interests are broadening. Increasingly, he is becoming interested in the world about him, in ideas, and in thoughts about human nature and about society. He is beginning to enjoy expressing his thoughts and to take some pride in creative effort.

Intellectually, adolescents are almost adults. They have the adult potential, for we are told that the brain and the neural development have reached maturation . . . .

How can occupational information be effectively presented to junior high school students is a natural question. Dr. Robert Hoppock, Professor of Education, New York University, in his Third Edition of OCCUPATIONAL INFORMATION, published in 1967 identified occupational information that is needed, where to get it, and how to use it in counseling and in teaching. He identifies the plant tour as coming closest to perfect teaching, for everyone learns, everyone enjoys it, and nobody feels overworked. . . .

. . . . . .

A job checklist is a good method to survey the possibilities of any job being considered. Points the checklist should include are:

a. Employment prospects
b. Nature of the work
c. Work environment
d. Qualifications
e. Union regulations
f. Discrimination practice
g. Preparation necessary for the work
h. Advancement
i. Earnings -- beginning and average for the job itself
j. Retirement, medical, and vacation plans
k. Number and distribution of workers
l. Advantages and disadvantages of the job

A variety of audio-visuals are available for presenting occupational information to junior high school students. These include:

a. T.V.
b. Films
c. Filmstrips
d. Slides
e. Overhead projectors
f. Charts
g. Displays
h. Bulletin boards
i. Tapes
j. Records
k. Socio-dramas

. . . . . .

The Principal of West Carrollton Junior High School believes that the school administrator can do much to insure the development of a good guidance program. He suggests that the administrator:

a. Really believe in the value of guidance.

b. Employ qualified counselors. Not only qualified by degree and certification, but by attitude, personality, and outlook.

c. Provide responsible counselor-pupil ratio.

d. Develop realistic foundations for guidance.

e. Provide facilities in which a counselor can operate effectively.

f. Provide the counselor with an opportunity to plan. He needs the planning period just as much as the subject matter teacher, and in most instances a lot more.

. . . . . .

Two questions exist for us as educators. The first is: Are we presenting our junior high school students with occupational information, and if not, why? The second question follows: How can our approach to providing occupational information for junior high school students be improved? Answers to these two questions are essential if our junior high school students are to "find out where the action is."

ORIENTATION TO WORK FOR THE STUDENTS IN THE JUNIOR HIGH SCHOOL

Dr. Charles Weaver, Guidance Supervisor
State Department of Education
Columbus, Ohio

In order to understand today's emphasis upon orientation to work for students in the junior high school, it is necessary to take a look at the historical development of the junior high school as an educational institution. It is of interest to note, too, that both the vocational guidance movement and the junior high school had their beginnings in the first decade of this century. It was in Boston in 1908 that Frank Parsons initiated a program of matching men and jobs signalling the beginning of vocational guidance . . . .
. . . . . .

The junior high school was originally perceived to be a school between the secondary and the elementary levels. This school was to include vocational education because many youngsters were going from this school to work. It would also include citizenship education because many young people needed Americanization and help on new social problems in their urban environment. According to educators at that time, the new school could help individuals and use new ways of grouping, and new forms of education.
. . . . . .

According to G. Stanley Hall, a popular psychologist at that time, an early adolescent was "a new kind of ebing who demands a new environment, a new content, new materials." The idea of a junior high school fitted in well, for it met the demand of society at that time; it tied into current educational thinking; and it recognized new concepts in psychology.

Originally, the junior high school was created, in part, for vocational education. Later, when child labor laws were enacted, vocational education was deemphasized. Through the intervening years vocational orientation and exploration became important and is still being emphasized today.
. . . . . .

The big push for training school counselors came as a result of the passage of Title V-B, of the National Defense Education Act of 1958. Its stated purpose was to train counselors in the importance and techniques of discovering talent and to encourage students with high scholastic potential to continue post-high school training. "Pursuit of excellence," was the motto. More and more it came to be

recognized that all students have potentialities, abilities, and interests and that these vary from individual to individual, and vary in quantity and quality within the same individual. The importance of the "guidance points of view" is that each student should be assisted in discovering his interests and abilities and then be encouraged to develop all of his abilities to the maximum. This philosophy is equally applicable to the college and non-college bound students.

As a result of the original counselor training emphasis upon discovering the academically gifted student, and encouraging his development, many school counselors initially lacked training or experience in assisting students interested in vocational training. To assist in overcoming this void in their original counselor education preparation, ancillary service funds from the Vocational Education Act of 1963 were made available by the Division of Vocational Education in Ohio to upgrade Ohio school counselors in their knowledge of the type and scope of vocational education training programs available to Ohio school students, of legislation affecting vocational education, and of approaches to cooperation with vocational teachers in our public schools . . . .

. . . . . .

Funds available under the Vocational Education Act of 1963 are also being used in Ohio to reimburse 50 per cent of the salaries of vocational guidance coordinators or vocational guidance counselors (we use the terms interchangeably), up to a maximum of $4500 if they are employed in joint vocational schools or in comprehensive high schools. The requirements for such reimbursement are that the counselor must be a holder of the Ohio Pupil Personnel Service Certificate for School Counselor, must have attended a summer vocational guidance seminar, must be employed in a school offering a minimum of five approved separate vocational education courses, and the vocational guidance provided must be an expansion of guidance services presently available in the school. We recommend that the vocational guidance coordinator be under the same administrative authority as the other counselors in the school . . . .

Another use of Vocational Education Act Funds for guidance in Ohio is to hold an annual workshop to upgrade our counselor educators in current information regarding vocational education . . . .

. . . . . .

Current writings indicate that increasingly junior high school students are being oriented to the world of work at the junior high school level. Stevens writing in the February 1968 issue of INDUSTRIAL ARTS AND VOCATIONAL EDUCATION described an Occupational Arts course for the seventh and eighth grades to show availability of skills in the students, the dignity of work, appreciation of tools and materials, and to assist students in developing a better understanding of

2

practical economics. This emphasis related to both vocational and avocational pursuits . . . .

. . . . . .

It is appropriate now to ask ourselves an important question. How can we work together as counselors and vocational educators to facilitate communication and to improve our services to youth at the elementary, junior high, and high school levels? The following ten suggestions are some ways in which school counselors can take a leadership role in working with their fellow educators:

1. Conduct an annual follow-up of graduates and dropouts of the preceding year to determine where they obtained full-time employment.

2. Prepare an annual survey of entry type jobs expected to be available at the end of the current year. Tabulate by job titles, employer's name and address and distribute to students and staff, and assist in student placement when desired.

3. Conduct plant tours on a planned monthly basis to possible places of entry employment.

4. Hold group conferences with graduates who are employed in different businesses so that they may describe their work, what they have learned from their work, how their preparation helped them, and give suggestions for curricular changes as a result of their experiences. Invite all interested students, staff, and parents to attend.

5. Tape record each group conference and index them by occupation, industry, and employer, with date of conference recorded on the tape and clearly labeled on the container. Discard all tapes that are five years old.

6. Maintain an up-to-date occupational file. If possible have the information reviewed by an authority. Clearly label materials prepared for recruitment which have an intention bias.

7. Hold open houses periodically for the general public to observe the training facilities.

8. Urge each student contemplating an occupation to ask himself such questions as, "Would I like it?" "Do I have what it takes?" and "Are workers trained in this occupation in demand or in surplus?"

9. Remember that it is just as easy to misinterpret occupational information as it is to misinterpret scores on a psychological test, and just as dangerous. Use whatever professional knowledge you have to find the best information available for the student and help him to understand it.

10. Promote persistently fair and equal treatment in the provision of educational and employment opportunities, along with social justice, for all youth.

. . . . . .

All of you here in attendance at the Institute of Occupational Analysis as a Basis for Curriculum Development are recognized leaders in your home state or you wouldn't be here. I challenge each of you to think of what you as one person can do to emphasize the importance of vocational education to the youth in the schools of your state. Keep in mind, too, that there "can't be strong vocational programs unless there are also good guidance programs." Ten words, each consisting of two letters, can provide an answer. These words are, "If it is to be, it is up to me."

ANALYSIS AND THE DEVELOPMENT OF CURRICULUM FOR "STUDENTS WITH SPECIAL NEEDS"

Dr. Robert W. Walker
Department of Vocational and Technical Education
University of Illinois, Urbana

. . . . . .

Dealing with the special needs of youth has been of vital concern to me since graduating from Penn State in the agricultural education curriculum back in 1949. My first teaching position was located in a mountainous section of Pennsylvania in that part of the state known as Appalachia. In a remote isolated school district with very few miles of hard surface roads and one telephone I was initiated into that group of people who were informally some of the first to be involved with students who really had special needs.

Now that I look back in the light of information that has been formally obtained I can't help but congratulate myself because unconsciously and without a special program, a good job was done in meeting the needs of the youngsters. Attention was focused on their needs, the curriculum was developed for them, and the course of study was implemented with procedure that involved a great amount of teacher-student-parent-community interactions. All students had a high interest in agriculture and the interest was used as a vehicle to motivate and carry them along in this field.

. . . . . .

The Warsaw Project

The Warsaw Project had its beginning in Warsaw. The need for the project was determined by three Warsaw High School faculty members, the superintendent, the guidance counselor, and the agricultural occupations instructor. These three people made a pact to solicit and obtain the assistance of the agricultural education division, the University of Illinois. Now, I ask you, isn't this a switch? Generally the idea for a project is conceived at the University and then sold to a school chosen to implement the study. Believe me! We really have used the momentum generated by this group of educators.

Objectives:

1. To identify boys in the Warsaw schools who are slow learners, underachievers and potential

dropouts who are presently out of the normal educational stream, but have an interest in applied biological science and agriculture.

2. To counsel and guide identified students into a special program designed to use applied biological and agricultural interest as a vehicle to stimulate and improve the attitudes of the boys toward educational involvement.

3. To select and develop a land laboratory that will provide an educational environment compatible with the interests of the slow learners and underachievers.

4. To develop, implement, and evaluate a course of study designed to focus on applied biological science and agriculture the content of which will facilitate change in the underachievers' or slow learner's attitude toward learning activity.

Phases of the study -- a three year study involving freshman and sophomore boys.

Financial Support

. . . The major portion of the funds were obtained from the Research Coordinating Unit, The State Board of Vocational-Technical Education and Rehabilitation. The Warsaw high school provided a share, approximately 25 per cent, of the monies expended and the University of Illinois provided one-fourth of my time for planning and evaluating the study.

. . . . . .

These students were foremost on our minds as Mr. Spangler, Mr. Trotter, and I conferred together at our first meeting at the University. What can be done to help these students? How can their needs be met? If they had a program designed to meet their needs, compatible with their interests, filled with activity and located away from the school for one-half of the day, would the attitudes of these students change toward school? Would they appreciate the attention of an instructor? Would they regain the feeling of personal worth, decide to remain in school and attend school regularly?

The land-laboratory! What a pleasant looking building located in the Mississippi Valley. Now the students have their own facility. This elementary school house has two rooms upstairs and two rooms and a kitchen in the basement. The land-laboratory building is located about four miles from the school. Mr. Trotter or Mr. Mitchell transfer the students to the school by bus.

. . . . . .

Looking at a huge washout discovered by the boys. Note the roots of trees and shrubs hanging like stalactites. Personally, I had never seen erosion like this which had happened so quickly that roots could be observed. What an opportunity to teach about plant growth! The boys had learned and wanted to demonstrate their knowledge to me. They really enjoyed talking to me about their discoveries and the learning involvement they had had with each. How do you think they performed when they were talking to elementary children and high school students about their discoveries?

. . . . . .

Back to the land-laboratory building and look through the window at three boys displaying a sign. Hillbilly Heaven on Hi-Lo Acres. This was the name of their land-laboratory at the beginning and accurately represents their attitude. But their attitudes are changing. Today they refer to their school involvement as the 'New Opportunity'; and they mean what they say.

. . . . . .

The boys like to build. They like to nail, swing a hammer, saw, and do things. Certainly, this building which they built gives tangible evidence that they can cooperate with one another and their instructor.

Here they prepare the basement of the school for their bred gilts that are due to farrow.

. . . . . .

Activity, the key to readjustment. Here they are actively involved in putting the finishing touches to the fenced area.

The boys feel that they have really accomplished a task. They evaluate and are satisfied. So is their teacher, their parents, and the school administration. I won't tell you how I feel because you have already guessed.

. . . . . .

The boys learned some of the basic mechanical skills in the school shop. The boys like to weld and are very receptive to this kind of activity. Learning to weld involved holding hands with the teacher. Now, don't you think that the student who disliked teachers will have a difficult time to continue feeling this way when he needs a hand holding his?

Now let us leave the land-laboratory and go back to the high school and meet the English teacher. May I introduce to you Mrs. Bartine, who teaches communications to the "new opportunity" class. Mrs. Bartine relates her instructions to the activities performed by the students at the land-laboratory. She is a dedicated teacher who has a real desire to develop her course content to meet the needs of her students.

. . . . . .

These students confide in Mrs. Bartine. She accepts them and makes them feel as if they can do that which they want to do.

She is extremely permissive. The students have learned to conform when they decide the time has arrived for conformance. In the meantime, a lamb that comes to class is accepted.

. . . . . .

How did we, the two graduate assistants and I, work closely with the Warsaw people? We used the telephone and we visited the project each month . . . .

. . . I have been concerned with the special needs of youth. We recognized that the youngsters in the Warsaw Project had a "dim future" yesterday, but today they have a new opportunity. Nine pictures are shown on this exhibit, one picture for each letter in the work, <u>activity</u>. Don't you think that the key to readjustment for these young people is learning activity?

THE PERT PROCESS OF PLANNING WITH IMPLICATIONS FOR ANALYSIS AND CURRICULUM CONSTRUCTION

Robert L. McKee, Vice President
Bell and Howell Company, Chicago

PERT has been helpful to education in a number of cases, and is quite adaptable for a curriculum development planning tool. It is in unknown and unknowable circumstances that PERT, the modern tool of modern management, is most valuable. For planning, scheduling, controlling, organizing, motivating--in all management situations, and particularly those involving first-time projects, PERT is probably the most useful of the many devices currently in use throughout the country.

History of PERT

PERT is a statistical technique--diagnostic and prognostic--for quantifying knowledge about the uncertainties faced in completing activities, physical and intellectual, essential for timely achievement of program deadlines. It is a technique for focusing management attention on danger signals which require remedial decisions and on areas of effort for which "trade-off" in time, resources, or technical performance might improve the capability to meet major deadlines.*

PERT was developed in 1958, by a cooperative effort of Navy Special Projects Office, Lockheed Aircraft, and Booze Allen and Hamilton, a management consulting firm, and is credited with cutting years from the Polaris Missile development program.

The basic foundation of PERT is the "network," a pictorial representation of the interdependencies and inter-relationships of the events and activities which comprise a project from the instant of its conception to the completion of the end product.

Because PERT is particularly useful in the successful management of highly complex, multi-level projects extending over long periods of time, it offers educators a well tried method of directing, planning, and controlling not only the physical aspects of educational projects but it enables management to schedule and utilize the intellectual and cerebral resources involved in such activities as curriculum development, test construction, or the publications resulting from such activities.

---

*PERT Handbook, Department of the Navy.

Industries seeking Defense contracts are required to use PERT in preparation of contract bids. Many of these contracts are the area of Research and Development--many College projects may be so classified. The U. S. Office of Education is underwriting such projects with millions of dollars--education is big business in this sense. It seems, therefore, to make good sense to prepare the educational community to accept, understand, and use the basic PERT principles in preparation of projects for USOE as well as using it in school management activities and projects within our education interest.

0700 - Curriculum and Catalog: Time: 5/12 - 8/18/65: 950 Man Hours

A. Curriculum

Although on the Master Chart (No. 1), curriculum and catalog appear as two separate lines of activity, in actual practice so many of the activities are interrelated and occur for the same reasons that the two activities appear on the same flow chart, Chart No. 4. (Each requires the same pre-requisites which are charted vertically, left side Chart No. 4.) In reality, the curriculum was determined by selecting large, safe areas of need which could be easily documented, staffed, and equipped in reference to the amount of time available to establish the college.

On July 7, the meeting of the first Occupational Advisory Committee was called. The purpose of these committees is to assure that the educational program in the new college will be geared to the needs of the community.

Following the publication of this first curriculum outline, the staff prepared the outlines for the courses of study and detailed the subject matter materials which culminated in the publication of the catalog on Sept. 3. In addition, a second brochure was prepared concurrently with the catalog and published on August 3. The activities and events concerned with the publication of information appear at the far left side of Chart No. 4.

Beginning early in June with event No. 719 on Chart No. 4, the following progression can be noted: Catalogs were requested from two year technical institutes, two-year community colleges, four-year technical and liberal arts institutions. These, and the courses designed by the Office of Education for use in technical programs, were studied, duplicated, and compared with each other and with the college's outlines

of projected courses of study. With these offerings by other colleges as a point of reference, the various courses to be offered were developed: the results were reviewed by the consultants, the Advisory Committess, and the local and state boards (events 723, 724, 725, 726). The final result, after approval by the State Department of Technical Education, was the curriculum as it appears in the college catalog.

It is estimated that over 430 man hours or 54 man days of work were needed to produce the curriculum and course descriptions. Of this time, 50 hours are the President's work on the first brochure and 80 hours, the Data Processing consultant's work on that particular course of study. Following Chart No. 4 from May 17 to September 27, the time needed for production of the curriculum was 430 man hours of work by the college staff, plus 520 hours of work on the survey of needs - 950 man hours or 118 man days of work.

The rough draft of the curriculum is the prerequisite for a number of other tasks: The establishment of personnel requirements in order for recruitment of personnel to begin; the production of copy for the catalog; and student recruitment.

Deans and Department Heads, during the planning of the curriculum could have considered the qualities desirable in the faculty responsible for administering the curriculum; decisions regarding the number of faculty members needed could have been made at an earlier date than was possible.

Since the curriculum will influence prospective students, the early availability of the catalog or of printed copies of individual curriculums would make possible a realistic estimate of the size and number of classes required for each course of study. In the creation of a college, establishment of an excellent and appropriate curriculum is a vital and complex process, and neither time nor effort should be spared in its early completion.

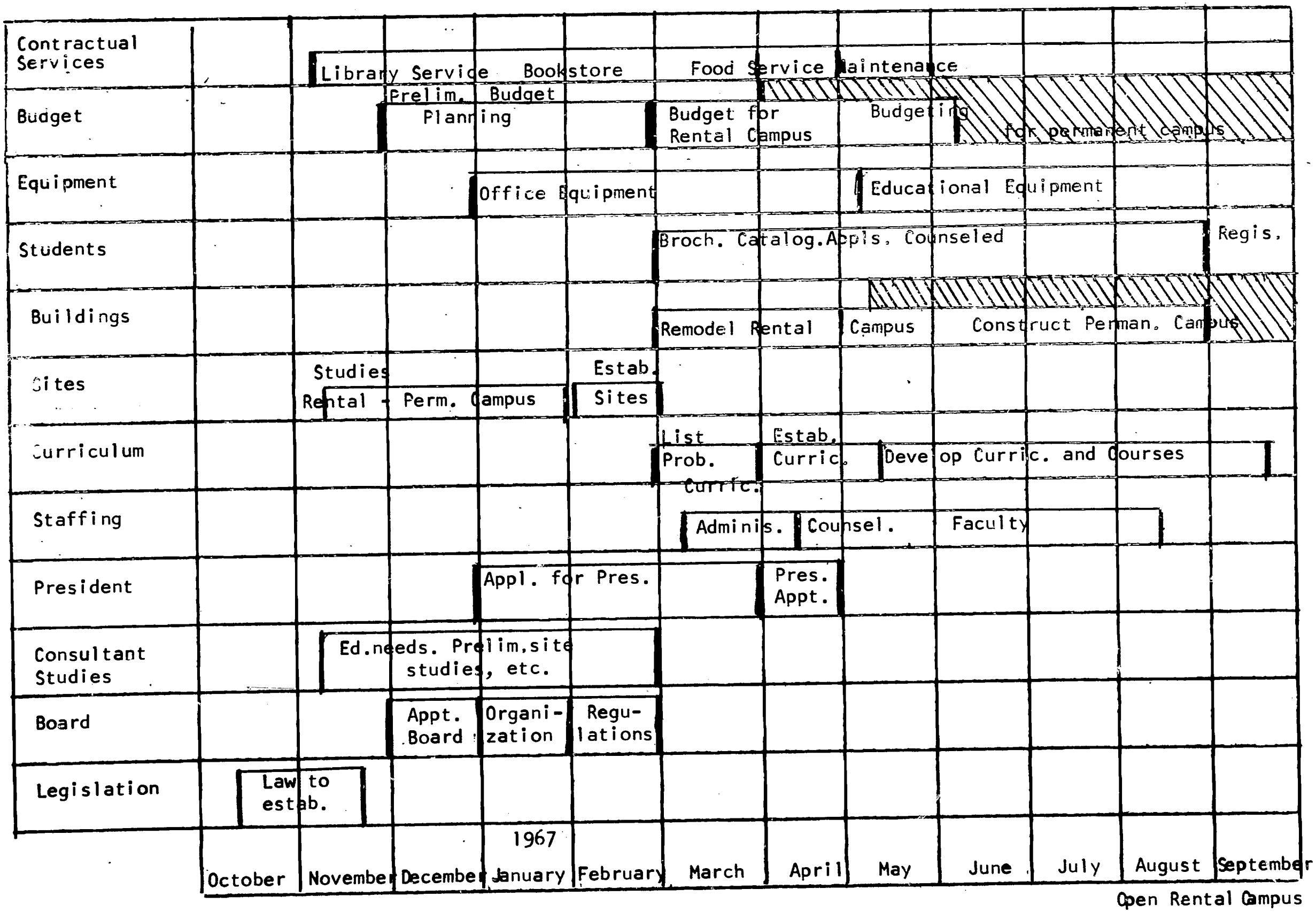
B. Catalog

The preparation of the catalog flows directly from the construction and adoption of the curriculum. On Chart No. 4, event 729 (adoption of curriculum) leads to 717, the event including the revision of the catalog prior to the President's submitting the catalog to the State Department for general approval. This is followed by delivery to the printer, receipt of the first galley proof, and develovery of the catalog itself, from September 3 to September 7.

Along with the production of the final catalog, a second brochure was worked on concurrently. This is shown at the far left of the chart as preceding the approval of the original dummy of the catalog. This brochure, which was delivered August 3, served as a catalog until the receipt of the formal catalog one month later. A total of approximately 30 days elapsed time was used to design, write, and publish the catalog. However, the bulk of the work was accomplished in two weekends with an approximate total of 85 man days of energy. It is recommended that, in addition to the catalog, considerable information be made available to aid in the difficult task of informing the community about the new college and its programs.

Chart No. 1

TIME SEQUENCE CHART
for
RENTAL CAMPUS - 1 YEAR TO OPEN



NORTHERN VIRGINIA TECHNICAL COLLEGE

CURRICULUM AND CATALOGUE

CHART NO. 4

99

423 President at work 5/17

421 Consults, employed, 6/1-

422 Secr. staff empl. 5/17

701 Advis. Comms. appointed 6/22

121 Temp. office space secured 5/15

777 Rhodes Survey of Ed. Needs 3/1

700 Rough draft of Curric. 5/21

719 Copies 2&4 yr coll. cat. sec. 6/1

720 Best curric. outlines duplicated 6/1--

721 NVTC Curric. compiled 7/1--

711 Course descr. & Nos. written 7/--9/--

722 Pro. curric. course descr. & Nos. comp. 8/5

723 Pro. Curric. sub. to Pres. 8/5

726 Pres. State, local Bds, revise 8/12

728 Final draft Curric. sub. to Pres. 8/17

729 Curric. acepted 8/18

999 Classes begin

724 Pro. Curric. sub. to Data Pro. Com. 8/9

727 Adv. Comms revis. suggested 8/9

742 Pro. Curric. sub. to Pol. Sc. Comm 8/9

709 Art, History layout, inform. etc. 8/

718 1st rough draft of catalogue 8/0

703 1st Brochure 5/21

708 2nd Brochure 8/3

707 Develop & Pres. approve dummy cat. 7/25

715 Coll. info. Photos, etc. for catalogue 5/1--

717 Revise art, lay out etc. 8/9-18

712 Pres. approv. cat. & to printer 8/18-20

713 1st galley proof 8/23

714 Catalogue delivered 9/3-7

K.J. RIPLEY

THE ROLE OF A CURRICULUM LABORATORY IN A CURRICULUM

Wallace Theilmann, Director
Curriculum Laboratory
State of California, Sacramento

So far this week you have heard and discussed two very important items in education, occupational analysis and curriculum development. These areas are important enough that I am happy that an institute like this is being held and that I can participate in it.

You have heard a lot of definitions this week and it is very important that we are all familiar with and understand these terms. To me a curriculum means a series of courses designed to cover the instruction in a designated field; an occupational or trade analysis means a detailed listing of duties, operations, and skills necessary to perform a clearly defined, specific job, organized into a logical sequence which may be used for teaching, employment, or classification purposes.

As an educator when you have completed your analysis you will have what I prefer to call a Course of Instruction. To me this means a compilation of all of the instructional materials required to effectively teach your course, and should be developed in terms of the basic objectives of your course, taking into account the grade level, the length of the course and the levels of skills and technical knowledge toward which you should be training. The personal attributes of attitude, judgment, appreciation, human relationships, sincerity and honesty, and the proper approach to securing a job, cannot be over-emphasized. Industry continues to stress these points as most important and too often lacking in new employees.

A complete Course of Instruction should contain the following:

1. Table of Contents (your course outline)
2. Instruction Sheets
   - a - Job, Operation, or Procedure Sheets
   - b - Information Sheets
   - c - Assignment sheets
3. Comprehensive Safety Test
4. Evaluation Tests, Final Examination, etc.
5. Bibliography
   - a - Textbooks, Reference Books
   - b - Periodicals, Trade Journals, etc.
   - c - Visual Aids

This type of work has been a requirement for years in many teacher-training programs. It represents a lot of work, but its use is limited to certain areas and individuals and it is important to keep it up to date. My assignment is to discuss with you better ways of developing a Course of Instruction, that would serve more people, a wider area, and still be flexible enough that it can continually meet the training needs of the industry involved.

My answer to this problem is a better understanding of the Role and Function of a Curriculum Laboratory. A Curriculum Laboratory can be set up on a district, county, state or regional basis.

The function or Role of a Curriculum Laboratory should be to work with representatives from industry and education to develop the material needed to meet their training needs.

The Laboratory should be centrally located, staffed and equipped to do the job properly.

1. The Curriculum Laboratory should be responsible for getting the needed work done.

2. The Laboratory should work closely with and get the approval of an advisory committee representing the industry.

3. The Laboratory should conduct workshops for and get the assistance of representative groups rather than merely individuals from the trade.

4. Specific assignments should be made to individuals in their particular area of interest wherever possible.

5. All work done should be checked by other individuals in the group.

6. When completed, the material should be edited and published and made available in loose-leaf binders.

7. The material should be reviewed periodically and necessary changes made or supplements issued.

8. The Laboratory should be so equipped and staffed so that the work can be done and used when needed.

9. The Laboratory should also assist and promote the use of all types of visual aids.

10. The Laboratory should be equipped to do the research and development to meet the changing needs of most trades.

A NEW APPROACH TO ANALYSIS

Dr. John Decker, Professor of Engineering
Arizona State University, Tempe

Need for a New Approach

Rational refinement of curricula is not possible with our present approaches. There is no way of determining the actual, real life effects of changes we prescribe, thus, there is no way of getting the feedback needed for planning. We are in a situation analogous to a rifleman shooting at a distant target hidden by a fog bank. He can shoot in the general direction of the target, but he cannot hope to improve his shooting until he can see a definite target and can tell where his bullets are striking with respect to it. Holding a committee meeting or conference may let him go safely with the majority intuition of the crowd, as we do in education, it cannot help him to knowingly improve his shooting.

We are up against a simple but fundamental semantic barrier created by the liberal-arts tradition of stating curricular objectives directly or indirectly in terms of high level abstractions. We can point in their general direction, but we cannot know whether any given change gets us closer to target or farther away. Grades, credits, etc., are but secondary standards that point vaguely and hopefully in the general direction of the hazy targets.

The New Approach

A procedure was derived for analyzing the functions of a medical laboratory technician in such a way that characteristics usually described abstractly as skill, experience, background knowledge, understanding of basic scientific principles, personality, judgment, etc., which can be evaluated only intuitively and subjectively, can be defined instead in great detail in concrete terms that can be dealt with rationally and objectively. The procedure was an adaptation of evental analysis, a technique development much earlier for orderly simplification and solution of complex problems of ecology.

Evental analysis is based on the fundamental principle that all human knowledge of the public world is limited to sensory inputs about objects and events, which are irreducible elements of cognition. Thus, any abstract or general statement about that world or any part of it (including other human beings and their behavior) must be reducible to these elements to be meaningful.

Results

The primary skills of a competent novice technician can be defined in terms of the number, speed and accuracy of laboratory test procedures he can perform. Such testing is well within the state of the art.

What must one see a technician do in order to call him an experienced old pro rather than merely a competent novice? From the viewpoint of the physician ordering the work, the main element of experience is a low probability of a plausible but seriously erroneous result. A novice is trained to avoid common errors. With time on the job comes opportunity to make unusual errors and to see them made by co-workers. As he becomes familiar with a longer list of errors and remembers how to avoid them, the probability of his making a serious errors can reasonably be expected to decrease. Thus evental specification of the primary component of that abstract quality called experience can be narrowed to a list of unusual errors and how to avoid them.

What must I see or hear a technician do in order to say he has a good scientific background? Direct evidence is his handling routine laboratory equipment well, his predicting correctly the behavior of unfamiliar equipment, and his giving explanations for many technical events that agree with mine or exceed my knowledge. The third category (explaining events) involves the main body of information in modern science textbooks, all of which are patterned for the traditional teaching approach of background-first-application-later wherein depth and scope of background are determined intuitively by the individual professor according to his taste or the customs of his group. A symbolic device for evental analysis, the plan of events, fixes a pattern for analytical explanation wherein depth, scope and method in inquiry are regorously rational rather than intuitive and whimsical. Restricting explanations to events encountered in the real world of the clinical laboratory avoids burdening students with rote memorization based on conjectural models constructed by specialized researchers to explain rote events encountered only under the highly improbable conditions of a research laboratory--the glamorous sounding trivia so often peddled enthusiastically in academia as the very latest in up-do-date "sophisticated" Science.

A pattern became clear for the necessary inquiry into abstract personal traits (personality, judgment, creativity, etc.): do not be concerned with defining <u>any</u> trait, per se, but instead collect accurate evental descriptions of conspicuously desirable and undesirable acttions of technicians actually observed by a reliable witness.

BUILDING THE MULTIPLIER EFFECT

Dr. Milton E. Larson, Professor of Vocational Education
Department of Vocational Education
Colorado State University, Fort Collins

I suppose the happy task comes to me to say the final words at this institute. I wanted to say that you have struggled mightily in the valley of analysis and some of you have climbed to the peaks; I can see some of you up to that 14,000 foot level we heard about last night and others are probably just getting over the 10,000 foot ledge right now. And I see all of you climbing across the great divide, getting over in the construction of curriculum which after all, is the only reason we do analysis.

It is a lot of fun to draw all those little circles and the squares aren't bad, and the rectangles come easier for me, but we are really doing it for a real purpose and that is to get at the curriculum which needs to be improved. I am sure all of you have had many, many reactions to curriculum that you yourself feel needs a lot of modification.

So as we have struggled in the valley of analysis and peeked behind the trees and turned over a few boulders and stubbed our toes on a few of the rocks, I hope that you will leave this institute feeling that those efforts have not been in vain and that they will be of value to you as you go ahead in the various activities of improving programs within your own institution. After all, we are dealing with the most valuable resource in the world and that which may have been neglected the most; human resource. What you and I can do to help other people do a better job is going to have a tremendous impact on the the civilization ahead as well as upon our immediate goals.

I can't help but think back to an old story that I am sure many of you have heard, the story from Greek Mythology, and it goes something like this. It was a story about a prince. This prince had caught a bird. He seemed to have some trouble with an oracle and this oracle constantly seemed to be finding fault with the prince and proving the prince was wrong. The human nature prevailed and this prince said he was going to get the best of that old oracle yet. He took the bird in his hand and he said to the oracle, "What do I have in my hand?" and the oracle said, "A bird." Then the prince said, "Is the bird alive or dead?", and the prince thought to himself, "Now, if he says, "dead" I will open my hands and let it fly away and if he says, "alive", I will take it and squeeze it in my hands and I will show him the dead bird. This time I am going to win the argument." The oracle analyzed very correctly the problem, I am not sure whether it was a zoned analysis or not, but he did analyze the problem correctly and said, "you have in your hand a bird but what happens to that bird is up to you."

You people have in your hands a "bird", too, and what happens to that "bird" is up to you. I hope that it results in improved curriculum for the youngsters and the people you are working with because you are important people, you are key people, you are the people who could get the multiplier effect that we want to get in vocational education. It is no longer a ratio of one to one.

Here we can get the effect generated throughout the whole community, the whole state, this is what we need and this is the hope of the U. S. Office when they gave us the job of trying to plan this analysis institute. We are going to expect you to do a great deal to help us get this kind of impact. We are going to come back in about three months and ask what have you done with the "bird"; what have you done with the "bird"; what have you done with analysis? It is wonderful for all of you to come here and have a good time. We like to take you on the picnics and we like to take you to the Lazy B and we like to show you the Rockies but we want you to go back and do something about analysis and curriculum improvement.

This is the problem of educators today, we can talk the thing to death and do nothing. Let's see if we can't do something now instead of just talking. I hope that you have a pleasant journey back.

APPENDIX A

INSTITUTE ON OCCUPATIONAL ANALYSIS AS A BASIS FOR CURRICULUM DEVELOPMENT

PROGRAM

July 29 - August 2
1968

Sponsored by the

Department of Vocational Education
Colorado State University
Fort Collins, Colorado

Institute Director -- Dr. Milton E. Larson
Institute Co-Director - Dr. Duane L. Blake

This institute is supported by a grant from the Office of Education
of the
Department of Health, Education and Welfare

INSTITUTE ON OCCUPATIONAL ANALYSIS AS A BASIS FOR CURRICULUM DEVELOPMENT

Reception and registration in Corbett Hall
7:00 - 9:00 p.m., Sunday, July 28

Also registration &:00 - 7:30 a.m., Monday, July 29
Student Center (Outside of Room 228

General Chairmen: Dr. Milton E. Larson and Dr. Duane L. Blake

Monday - July 29

7:30	OPENING	ROOM 228 -- STUDENT CENTER BUILDING
	A. Welcome	Dr. Duane L. Blake, Chairman Department of Vocational Education
	B. Greetings	President W. E. Morgan Colorado State University
	C. Announcement	Dr. Milton E. Larson
8:00	ANALYSIS AS THE BASIS FOR EFFECTIVE CURRICULUM DEVELOPMENT --	Dr. C. Thomas Olivo, Director Division of Industrial Education The State Education Department Albany, New York
9:00	Coffee Break	
9:30	CONCEPTS AND PROCEDURES FOR A UNIVERSAL APPROACH TO OCCUPATIONAL ANALYSIS FOR CURRICULUM DEVELOPMENT —	Dr. C. Thomas Olivo
11:00	Lunch	
12:30	ANALYSIS APPLICATIONS FOR VARIOUS LEVELS: POST HIGH SCHOOL, HIGH SCHOOL, JUNIOR HIGH SCHOOL, AND ELEMENTARY-- AN OVERVIEW	Dr. Edward L. Kurth Associate Professor College of Education University of Florida Gainesville, Florida

2:00	GROUP SESSIONS WORKSHOP -- BASIC CONCEPTS AND APPLICATIONS OF THE ZONED ANALYSIS CHART	-- Three Groups -- Instructors: Mr. James Wilson (Room 220-222) State Board for Vocational Education, Colorado Mr. Martin Krusnik (Room 224) Coordinator, Opportunity School, Denver, Colorado Mr. Thomas Stone (Room 226) Southern State College Springfield, South Dakota
8:00 p.m.	FILM SHOWING (Room 228) "The Future" "Where the Action Is"	

Tuesday - July 30

7:30	CURRICULUM DEVELOPMENT FOR TODAY AND TOMORROW WITH BROAD PROCEDURES FOR DEVELOPMENT OF THE COURSE OF STUDY	-- Dr. Edward L. Kurth
9:00	Coffee Break	
9:30	ANALYSIS TO SERVE THE FULL SPECTRUM OF NEED FOR: IN-SCHOOL YOUTH, OUT-OF-SCHOOL YOUTH, STUDENTS WITH SPECIAL NEEDS, ADULTS, ETC.	-- Dr. Maurice W. Roney, Director School of Occupational Education Oklahoma State University Stillwater, Oklahoma
11:00	LUNCH	
12:30	ANALYSIS FOR VOCATIONAL FIELDS UTILIZING THE CLUSTER CONCEPT (ELECTRO-MECHNICAL, ETC.)	Dr. Maurice W. Roney, Director
1:45	Coffee Break	
2:00	GROUP SESSIONS WORKSHOP -- DESIGN AND DEVELOPMENT OF THE CONTENT ANALYSIS CHART	Mr. James Wilson Mr. Martin Krusnik Mr. Thomas Stone
5:00	Departure for Lazy B Ranch -- outing and picnic	

Wednesday - July 31

7:30 LABOR MARKET INFORMATION -- Mr. Leon Lewis
U. S. Department of Labor
Bureau of Employment Security
Washington, D.C.

9:00 Coffee Break

9:30 THE ANALYSIS OF OCCUPATIONS- Mr. Leon Lewis

11:00 LUNCH

12:30 PANEL DISUCSSION: ANALYSIS APPLICATIONS TO VARIOUS SERVICES

STUDENTS WITH SPECIAL NEEDS --	Mr. Zen S. Hosler, Director Vocational Education Jefferson County, Colorado
REHABILITATION NEEDS	Mr. W. C. Weidner, Deputy Director, Colorado Department of Rehabilitation Denver, Colorado
HOME ECONOMICS	Dr. Mary Helen Haas, Professor Home Economics Education Colorado State University
AGRICULTURAL EDUCATION	Dr. Irving C. Cross, Associate Professor of Agricultural Education Colorado State University
BUSINESS & OFFICE EDUCATION	Professor Albert C. Masterson Head of Business and Office Education Colorado State University
DISTRIBUTIVE EDUCATION	Professor Joseph C. Roberts, Head of Distributive Education Colorado State University

1:45 Coffee Break

2:00 GROUP SESSIONS WORKSHOP - BUILDING THE COURSE OF STUDY
Mr. James Wilson
Mr. Martin Krusnik
Mr. Thomas Stone

5:00 Departure for Poudre Canyon Recreational Area - Outing and barbecue

Thursday - August 1

7:30	CURRICULUM ANALYSIS -- THE STATEWIDE PATTERN IN THE STATE OF WASHINGTON	Mr. Frank Wimer, Director Trade, Industrial and Technical Education State Division of Vocational Education Olympia, Washington
9:00	Coffee Break	
9:20	CURRICULUM ANALYSIS -- THE STATEWIDE PATTERN IN THE STATE OF WASHINGTON (Cont.)	Mr. Frank Wimer
10:40	OCCUPATIONAL INFORMATION FOR JUNIOR HIGH SCHOOL STUDENTS	Dr. Charles Weaver, Guidance Supervisor State Department of Education Columbus, Ohio
11:00	LUNCH	
12:30	ORIENTATION TO WORK FOR THE STUDENTS IN THE JUNIOR HIGH SCHOOL	Dr. Charles Weaver
1:45	Coffee Break	
2:00	GROUP SESSIONS WORKSHOP TRANSLATING ANALYSIS INTO INSTRUCTIONAL MATERIALS: - OPERATION SHEETS - INFORMATION SHEETS - TEACHING GUIDES	Mr. James Wilson Mr. Martin Krusnik Mr. Thomas Stone
6:00	Banquet (West Ballroom)	Awarding of Certificates Presentation - Mr. and Mrs. Robert L. Brown

Friday - August 2

7:30	ANALYSIS AND THE DEVELOPMENT OF CURRICULUM FOR 'STUDENTS WITH SPECIAL NEEDS'	Dr. Robert W. Walker Department of Vocational and Technical Education University of Illinois Urbana, ILlinois
9:00	Coffee Break	

9:30	THE "PERT" PROCESS OF PLANNING WITH IMPLICATIONS FOR ANALYSIS AND CURRICULUM CONSTRUCTION	Mr. Robert L. McKee Vice President Bell and Howell Company Chicago, Illinois
11:00	LUNCH	
12:30	THE ROLE OF A CURRICULUM LABORATORY IN CURRICULUM	Mr. Wallace Theilmann, Director Curriculum Laboratory State of California, Sacramento, California
1:45	Coffee Break	
2:00	A NEW APPROACH TO ANALYSIS	Dr. John Decker Professor of Engineering Arizona State University Tempe, Arizona

Friday - August 2

3:15	BUILDING THE MULTIPLIER EFFECT; SUMMARY AND EVALUATION	Dr. Larson and staff

APPENDIX B

INSTITUTE ON OCCUPATIONAL ANALYSIS AS A BASIS FOR CURRICULUM DEVELOPMENT

PARTICIPANTS

Acquaviva, Nicholas J.
Coordinator - Curriculum Lab
State University College
Division of Voc-Tech Education
Oswego, New York 13126

Aikin, Brent R.
Assistant Chief - Bureau of B.E.
State Department of Education
Vocational Education Section
721 Capitol Mall - Room 441
Sacramento, California 95814

Anderson, Darrell L., Coordinator
State Board for Comm. College
and Occupational Education
207 State Services Building
Denver, Colorado 80203

Atwood, DAle D., Chairman
Division of Business
Minot State College
Ninth Avenue, N.W.
Minot, North Dakota 58701

Ball, John H.
Director and Coordinator
Voca;tional-Technical Education
Coventry High School
Coventry, Rhode Island 02816

Barker, Richard L.
Director - RCU
State Department of Education
Division of Vocational-Tech. Ed.
Concord, New Hampshire 03301

Barnes, William
Consultant - RCU
Texas Education Agency
201 E. 11th Street
Austin, Texas 78711

Belton, Doris L.
Associate Supervisor
Bureau of Home Economics
State Department of Education
Albany, New York 12224

Beringer, Ken J.
Distributive Education Coordinator
1001 East Main
Vermillion, South Dakota 57069

Bolden, Bertha H., Supervising Dir.
Health Occupational Education
District of Columbia Public Schools
4121 - 13th Street, N.W.
Washington, D. C. 20011

Boomer, Marceline A., Asst. Consultant
Home Economics Education
State Department of Education
Vocational-Technical Division
Montpelier, Vermont 05601

Bordini, Dominic J., Director
Research and Development
Department of Education
Division of Voc-Tech. Education
1919 N. Lake Street
Neenah, Wisconsin 54956

Boulton, Jack, Asst. State Supervisor
T & I Division
State Board of Vocational Education
Santa Fe, New Mexico 87501

Bracey, Earl W.
Assistant Professor - Business Ed.
Old Domonion College
Hampton Blvd.
Norfolk, Virginia 23508

Beach, Theo O., Coordinator
Vocational-Technical Education
Arizona Western College
3100 Avenue A.
Yuma, Arizona

Beemer, Melvin E., State Supervisor
Distributive Education
Division of Vocational Education
Pierre, South Dakota 57501

Caldwell, Robert T.
Consultant for Tech. Education
State Department of Education
Knott Building
Tallahassee, Florida 32304

Carpenter, Earl T., Director
RCU, Professor - Agricultural Ed.
101 Godfrey Hall
Clemson University
Clemson, South Carolina 29631

Cox, Walter L., Jr., Teacher
Trainer, Intro. to Vocations
Tompkins Hall
North Carolina State University
Raleigh, North Carolina 27607

Crawford, Lucy C., Associate
Professor, Distributive Ed.
Virginia Polytechnic Institute
College Avenue
Blacksburg, Virginia 24061

Dahlin, Gene L.
Vocational Teacher Educator
Northern Michigan University
Presque Isle Avenue
Marquette, Michigan 49855

Davison, Mildred
Occupational Trends Analyst
City University of New York
535 East 80 Street
New York, New York 10021

Dieffenderfer, Richard A.
Assistant Director, Occupational
Coordinating Unit
P. O. Box 697
Dover, Deleware 19901

Bradley, Thomas L., Supervisor
Basic Occupational Skills & Training
228 N. LaSalle Street
Chicago Board of Education
Chicago, Illinois 60601

Brown, Lloyd D., State Supervisor
T & I and Technical Education
State House
Indianapolis, Indiana 46204

Elias, John E., Admin. Director
Business & Distributive Education
Nebraska State Department of Ed.
State Capitol Building
Lincoln, Nebraska 68509

Farnsworth, Clayton E., Head
Administration
Southern Nevada Voc-Tech. Center
5710 Maple Road
Las Vegas, Nevada 89109

Flinn, Laurence H., State Supervisor
Trade, Industrial & Tech. Education
State Department of Education
P. O. Box 248
Olympia, Washington 98501

Gardner, Shirley A., Specialist
Home Economics Education
Utah State Dept. of Public Instruction
1300 University Club Building
Salt Lake City, Utah 84111

Gleckler, Ralph L., State Supervisor
Distributive Education & Work Study
New Mexico State Dept. of Education
139 South Castillo
Santa Fe, New Mexico 87501

Graham, Laurence N., Principal
Chugiak High School
Box 218
Eagle River, Alaska 99577

Grier, William L., Voc. Coordinator
F. W. Olin Vocational High School
1054 - Avenue F Ensley
Birmingham, Alabama 35218

Edwards, Ruth A., Program
Specialist - Curriculum
State Department of Education
1717 Quarrier Street
Charleston, West Virginia 25311

Hansen, Kenneth E., Assistant
State Supervisor - Ag. Ed.
State Board for Vocational Education
518 Front Street
Boise, Idaho 83702

Hay, G. Earl, Supervisor
of Vocational Curriculum
Bureau of Secondary Curriculum
Development
New York State Education Dept.
Albany, New York 12224

Hendricks, Albert J., Head
South Central Community College
88 Ford Street
Hamden, Connecticut 06514

Hill, E. Joy, Specialist
Health Occupations
Instructional Materials Lab.
Room 151, Taylor Education Bldg.
University of Kentucky
Lexington, Kentucky 40506

Hinton, Bruce M., Director
of Vocational Education
Knox County Board of Education
400 West Hill Avenue
Knoxville, Tennessee 37902

Hoefer, Fred L., Coordinator
Veterans Education
Colo. State Board for Community
Colleges and Occupational Ed.
207 State Services Building
Denver, Colorado 80203

Hoflund, Marvin S., State Director
T & I and Technical Education
State Department of Education
State Capitol Building - Room 201
Cheyenne, Wyoming 82001

Grove, William R., Consultant
Manpower Training
State Board for Voc. Ed. & Rehab.
500 East Capitol Avenue
Springfield, Illinois 62701

Jacobson, Ruth A., Supervisor
of Health Occupations
State Department of Education
P. O. Box 248
Olympia, Washington 98501

Johnson, E. Bernice, Assistant
Professor
North Carolina A & T State Univ.
312 North Dudley Street
Greensboro, North Carolina 27411

Joyner, Olen D., Coordinator
Industrial Technical Service
State Department Voc-Tech. Ed.
1515 W. 6th Avenue
Stillwater, Oklahoma 74074

Knight, William G., Supervisor
of Vocational Agriculture
State Department of Education
State Education Building
Little Rock, Arkansas 72201

Lawrence, C. M., Director
Agricultural Education
State Department of Education
Room 275, Knott Building
Tallahassee, Florida 32304

Loswen, Curtis, E., Coordinator
Agricultural Education
State System of Higher Education
Division of Continuing Education
126 General Services Building
Salem, Oregon 97310

Loudermilk, Kenneth M, Director RCU
Room 201-B, Administration Bldg.
University of Idaho
Moscow, Idaho 83843

Huffman, John L., Jr.
Associate State Supervisor
Diversified & Comprehensive
Vocational Education
State Department of Public
Instruction
Room 445, Education Buidling
Raleigh, North Carolina 27602

Iglesias, Ramon, Assistant Dir.
T & I Education
Department of Education
Vocational & Technical Division
108 Domenech Street - P.O. Box 818
Hato Rey, Puerto Rico 00919

McLeskey, Carl E., Assistant
State Supervisor
State Department of Education
Division of Vocational Education
98 Mitchell Street, S.W.
Atlanta, Georgia 30303

Medgard, Philip M., State
Supervisor, Trade, Industrial
& Technical Education
State Division of Vocational Ed.
Old Capitol Building
6th and Franklin
Olympia, Washington 98501

Meek, Ronald, State Supervisor,
of Special Services
State Department of Vocational-
Technical Education
1515 West Sixth Avenue
Stillwater, Oklahoma 74074

Miller, Leslie V., Assistant State
and Teacher Trainer
Manpower Division
State Department of Voc.-Tech. Ed.
1515 W. 6th Avenue
Stillwater, Oklahoma 74074

Miller, Robert L., Instructor
Department of Ind. & Tech. Ed
North Carolina State University
P. O. Box 5096
Raleigh, North Carolina 27607

Macak, Walter, J., Director,
Vocational Facilities Planning
State Department of Education
Vocational Division
225 West State Street
Trenton, New Jersey 08625

Matthews, Nancy, Program Specialist
Home Economics Education
State Department of Education
Huntington, West Virginia 25704

Pennington, Don E., State Supervisor,
Area Vocational Schools
Department of Public Instruction
600 Old Trails Building
309 West Washington STreet
Indianapolis, Indiana 46204

Penrod, Walter, Assistant Director
Division of Vocational Education
Department of Public Instruction
Room 401, State House
Indianapolis, Indiana 46204

Peterson, Marla P., Activities
Coordinator, Business and Office Ed.
Ohio State University
980 Kinnear Road
Columbus, Ohio 43212

Pisciotta, Anthony A, Supervisor
Trade and Industrial Division
Colorado State Board for Community
Colleges and Occupational Education
207 State Services Building
Denver, Colorado 80203

Pope, Mary E.
Teacher Educator
Mississippi State College for Women
Columbus, Mississippi 39701

Moody, Marian P., Teacher-Educator
Home Economics
Department of Education
Augusta, Maine 04330

Munson, Samuel N., Supervisor
Board of Vocationa, Technical and
Adult Education
137 East Wilson Street
Madison, Wisconsin 53703

Noall, Sandra H., Specialist
Health Occupations
State Board for Vocational Ed.
136 East South Temple
Salt Lake City, Utah 84111

Owens, Devert, Assistant Professor
College of Education
University of Kentucky
Lexington, Kentucky 40506

Ridenour, Harlan E., Director
Ohio Voc. Ag. Curriculum
Materials Service
The Ohio State University
2120 Fyffe Road
Columbus, Ohio 43210

Ringo, Albion L., Supervisor
of Program Development
State Department of Education
Public Service Building
Salem, Oregon 97310

Robison, Robert A., Supervisor
Industrial Education
State Department of Education
P. O. Box 480
Jefferson City, Missouri 65101

Powell, Karl F., Supervisor
of Distributive Education
Milwaukee Public Schools
5225 West Vliet Street
Milwaukee, Wisconsin 53208

Reinhardt, Claire B., Consultant
State Department of Education
Hartford, Connecticut 06115

Reynolds, Isabel L., State
Supervisor of Home Economics
Department of Public Instructor
Division of Vocational Education
309 West Washington Street
Indianapolis, Indiana 46204

Rice, William L., MDT Coordinator,
State Board for Community Colleges
and Occupational Education
207 State Services Buidling
Denver, Colorado 80203

Shelby, Gerald R., Supervisor
Vocational Guidance
Nevada State Department of Education
Heroes Memorial Building
Carson City, Nevada 89701

Sheldon, Dora R., Vocational
and Technical Education Program
Officer, U.S. Office of Educattion
Department of Health, Education and
Welfare
John F. Kennedy Federal Building
Room 1309-A
Boston, Massachusetts 02203

Shepherd, Albert G., Jr., Research
Coordinator for Vocational Ed.
State Department of Education
Vocational Education Division
P. O. Box 771
Jackson, Mississippi 39205

Rouner, Evelyn I., Chairman of
Department of Home Economics
Central Michigan University
Washington Street - Wightman Hall
Mount Pleasant, Michigan 48858

Sartin, Robert D., Coordinator
Curriculum Laboratory
Mississippi State University
Drawer NU
State College, Mississippi 39762

Scarborough, C. C., Professor
and Head
Agricultural Education
North Carolina State University
School of Education
Raleigh, North Carolina 27607

Schuermann, William O., Chief
Manpower Training and Specialist
Program Section
State Department of Public
Instruction
Grimes State Office Building
Des Moines, Iowa 50319

Scott, Charlotte A., Coordinator
Health Occupations
Quincy Vocational-Technical School
Woodward Avenue
Quincy, Massachusetts 02169

Sechrest, Charles H., Professor
of Industrial Education
Wayne State University
College of Education
Detroit, Michigan 48202

Thompson, Les L., Area Consultant
State Department of Vocational
Education
10th Floor, State Capitol Building
Lincoln, Nebraska 68509

Shigetomi, Samson S., Director
Vocational-Technical Education
Community College System
University of Hawaii
2327 Dole Street
Honolulu, Hawaii 96822

Siy, Louis J., Supervisor,
Bureau of Manpower Development
and Training
New York State Education Dept.
Washington Avenue
Albany, New York 12224

Smith, Joel M., Assistant State
Supervisor (Program Consultant)
Department of Education
98 Mitchell Street, S.W.
Atlanta, Georgia 30334

Stansbury, Robert W., Occupation
Specialist
State Department of Education
State Capitol
Cheyenne, Wyoming 82001

Stoddard, Joan E., Consultant
Health Occupations Education
State Department of Education
State Public Service Building,
Room 305, Salem, Oregon 97301

Stover, W. F., Assistant State
Supervisor
Trade and Industrial Education
The Ohio State University
1885 Neil Avenue
Columbus, Ohio 43210

Whigham, Thelma G., Assistant
Director - Home Economics
Instructional Materials Center
Texas Technological College
P. O. Box 4067
Lubbock, Texas 79409

Van Overschelde, Imogene M.
State Home Economics Education
Supervisor
State Division of Vocational
& Technical Education
State Capitol Building
Pierre, South Dakota 57501

Vines, Lester F., Teacher Educator
Assistant Professor
Iowa State University
104 Industrial Education Building
Ames, Iowa 50010

Warren, George D., Consultant
Trade and Industrial Education
State Department of Education
Salem, Oregon 97310

Wasden, Jed W., State Supervisor
of Trade & Industrial Education
State Department of Public
Instruction
136 East South Temple
Salt Lake City, Utah 84111

Weaver, Gerald L.,
Technical Drafting Department
N. W. Kansas Area Vocational-
Technical School
1208 Harrison
Goodland, Kansas 67735

Wiggins, Charles S., Associate
Agricultural Education
Bureau of Agricultural Education
State Department of Education
Albany, New York 12224

Williams, Earl F., Curriculum
Material Specialist, T & I Ed.
State Department of Education
191 Central Avenue, S.W.
Atlanta, Georgia 30303

Williams, Elwyn C., Consultant
Texas Education Agency
Capitol Station - 201 E. 11th Street
Austin, Texas 78711

Wilson, Janet M., Director
Home Economics Education
State Department of Education
10th Floor - State Capitol Building
Lincoln, Nebraska 68509

Wood, Albert P., Supervisor
Vocational-Technical Education
Kansas City, Missouri, Public Schools
1211 McGee Street
Kansas City, Missouri 64101

Wright, Lucille E., Teacher
Education - Distributive and
Office Education
University of Northern Iowa
Seerley Hall #34
Cedar Falls, Iowa 50613

Ziegler, Furman E., Vocational
Supervisor
Colorado Department of Institutions
4143 South Julian Way
P. O. Box 206
Fort Logan, Colorado 80115

APPENDIX C

EVALUATION FORM

DIRECTIONS:

Read each statement carefully and decide how you feel about it. You will agree with some statements and disagree with others. You are offered five possible answers to each statement. The "undecided" answer should be circled only when you have no opinion. Circle one number following each statement. PLEASE ANSWER ALL STATEMENTS.

Example:	Strongly Agree	Agree	Unde-cided	Dis-agree	Strongly Disagree
The city needs to improve garbage collection. . . .	5	4	3	2	1

This person feels in no uncertain terms that garbage collection schedules are inadequate.

	Strongly Agree	Agree	Unde-cided	Dis-agree	Strongly Disagree
A. I FEEL THAT:					
1. The purposes of this institute were clear to me.	5	4	3	2	1
2. The objectives of this Institute were not realistic.	5	4	3	2	1
3. Specific purposes made it easy to work efficiently.	5	4	3	2	1
4. The participants accepted the purposes of this Institute. . .	5	4	3	2	1
5. The objectives of this Institute were not the same as my objectives.	5	4	3	2	1
6. I didn't learn anything new.	5	4	3	2	1

	Strongly Agree	Agree	Unde-cided	Dis-agree	Strongly Disagree
7. The material presented was valuable to me. . . .	5	4	3	2	1
8. I could have learned as much by reading a book. .	5	4	3	2	1
9. Possible solutions to my problems were considered...	5	4	3	2	1
10. The information presented was too elementary. . . .	5	4	3	2	1
11. The speakers really knew their subjects.	5	4	3	2	1
12. The discussion leaders were well prepared. . . .	5	4	3	2	1
13. I was stimulated to think about the topics presented	5	4	3	2	1
14. New acquaintances were made which will help in the future.	5	4	3	2	1
15. We worked together well as a group.	5	4	3	2	1
16. We did not relate theory to practice	5	4	3	2	1
17. The sessions followed a logical pattern	5	4	3	2	1
18. The schedule was too fixed	5	4	3	2	1
19. The group discussions were excellent.	5	4	3	2	1
20. There was very little time for informal conversation.	5	4	3	2	1
21. I did not have an opportunity to express my ideas.	5	4	3	2	1
	87				

		Strongly Agree	Agree	Unde-cided	Dis-agree	Strongly Disagree
22.	I really felt a part of this group.	5	4	3	2	1
23.	My time was well spent. .	5	4	3	2	1
24.	The institute met my expectations.	5	4	3	2	1
25.	I have no guide for future action	5	4	3	2	1
26.	Too much time was devoted to trivial matters. . . .	5	4	3	2	1
27.	The information presented was too advanced.	5	4	3	2	1
28.	The content present was applicable.	5	4	3	2	1
29.	Institutes such as this will contribute little to occupational education	5	4	3	2	1
30.	Institutes of this nature should be offered again in future years . .	5	4	3	2	1

B. How do you plan to apply the outcomes you have obtained from attending this institute (Number 1, 2, 3, 4, 5, 6, in order of importance with No. 1 being the most important)

__1. Writing an article or other publication.

__2. Planning meetings for vocational educators in my area on the subject.

__3. Stimulating more occupational analysis for curriculum construction.

__4. More careful review of existing curriculum materials.

__5. Building a closer link with industry, business, and agriculture.

__6. Other: (List)_____

C. In the space below indicate any suggestions you may have for increasing the applications of knowledge gained at this Institute.

D. Indicate below the areas of subject-matter content which you feel should be included in future Institutes.

E. What were the strong points of this Institute as you see it?

F. What were the weak points of this Institute as you see it?

G. Other Comments (Use the back of this sheet if necessary)

APPENDIX D

COLORADO STATE UNIVERSITY
DEPARTMENT OF VOCATIONAL EDUCATION

POST-INSTITUTE EVALUATION FORM
DR. MILTON E. LARSON

INSTITUTE ON OCCUPATIONAL ANALYSIS AS A BASIS FOR CURRICULUM DEVELOPMENT

This form is an important tool designed to provide feed-back after an interval of time following the institute to appraise the degree of utilization and application by institute participants of concepts, processes, and materials of the institute.

PLEASE COMPLETE AND RETURN THE FORM AT YOUR EARLIEST CONVENIENCE WITHIN THE NEXT TEN DAYS

Part I

Circle the number following each statement to indicate the degree of value of your present position of the concepts, processes, and materials of the institute. If the institute had no value for a particular statement circle "1", if a very high degree of value circle "5". Estimate values between on the 5-point scale given.

INFORMATION GAINED AT THE INSTITUTE HAS HELPED ME:	Highest (Circle your response)				None
1. In making analysis for curriculum construction	5	4	3	2	1
2. In the further study of analysis techniques	5	4	3	2	1
3. In utilizing zoned analysis to my field	5	4	3	2	1
4. In making content analysis of units of instruction	5	4	3	2	1
5. In understanding the analysis approach to service areas, and special groups, i.e. disadvantaged	5	4	3	2	1
6. In planning workshops on analysis	5	4	3	2	1
7. In teaching others how to use analysis	5	4	3	2	1

		Value				
		Highest				None
8.	In construction of curricula	5	4	3	2	1
9.	In teaching others to better construct curricula	5	4	3	2	1
10.	In evaluating curriculum materials	5	4	3	2	1
11.	In planning new instructional programs	5	4	3	2	1
12.	In writing courses of study	5	4	3	2	1
13.	In planning programs for curriculum improvement	5	4	3	2	1
14.	In writing proposals for curriculum projects	5	4	3	2	1
15.	To build a closer link with industry, business, and/or agriculture	5	4	3	2	1
16.	To apply concepts of the "PERT" process	5	4	3	2	1
17.	In my research activities	5	4	3	2	1
18.	Writing articles or other written materials	5	4	3	2	1
19.	In preparation of speeches	5	4	3	2	1
20.	By providing a useful administrative tool	5	4	3	2	1
21.	Through new insights and approaches to some of the problems of vocational education	5	4	3	2	1
22.	In conveying the concepts and understanding of vocational education to the public	5	4	3	2	1
23.	In working more effectively with other educators	5	4	3	2	1
24.	By providing a guide for future action	5	4	3	2	1
25.	To stimulate others to improve instructional programs	5	4	3	2	1

Part II

CIRCLE YOUR RESPONSE

26. If you were presented the opportunity to attend a more advanced institute focused on analysis for curriculum construction would you be interested in attending such an institute under conditions similar to those for this institute? YES NO UNCERTAIN

27. Would you recommend to your friends in vocational education attendance of such an institute if the opportunity were made available to them? YES NO UNCERTAIN

Part III

28. If you have developed any materials for yourself or others employing concepts, procedures, or practices advanced by the institute, I would welcome receiving copies of these materials.

29. As you reflect back to the institute, list comments which you feel would strengthen the institute.

30. Other comments

APPENDIX E

ILLUSTRATIONS OF MATERIALS DEVELOPED BY PARTICIPANTS
AFTER TERMINATION OF INSTITUTE

DATE: October 9, 1968

TO: Participants in National Dissemination and Interpretation Seminar in Distributive Teacher Education Curriculum Development

FROM: Lucy C. Crawford

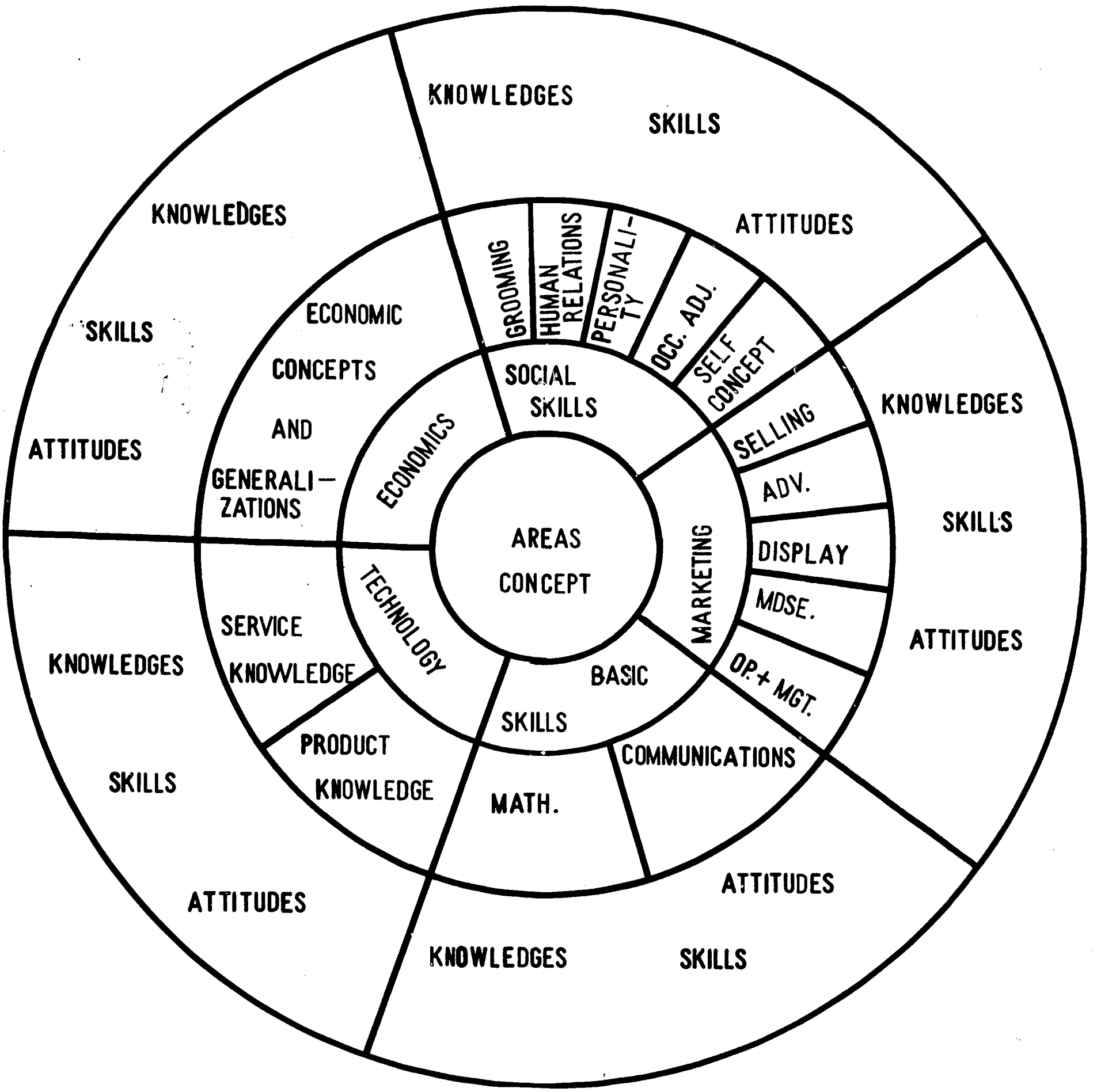
I am enclosing copies of a zone analysis of jobs in the seven categories of business included in the research study, "A Competency Pattern Approach to Curriculum Construction in Distributive Teacher Education." Also included is a zone analysis of the distributive education curriculum based on an agreed-upon basic belief (Number 52) identified in the first step of this study. A copy of the PERT Process of Planning Chart showing the time sequence of major activities in three phases of the study is also enclosed.

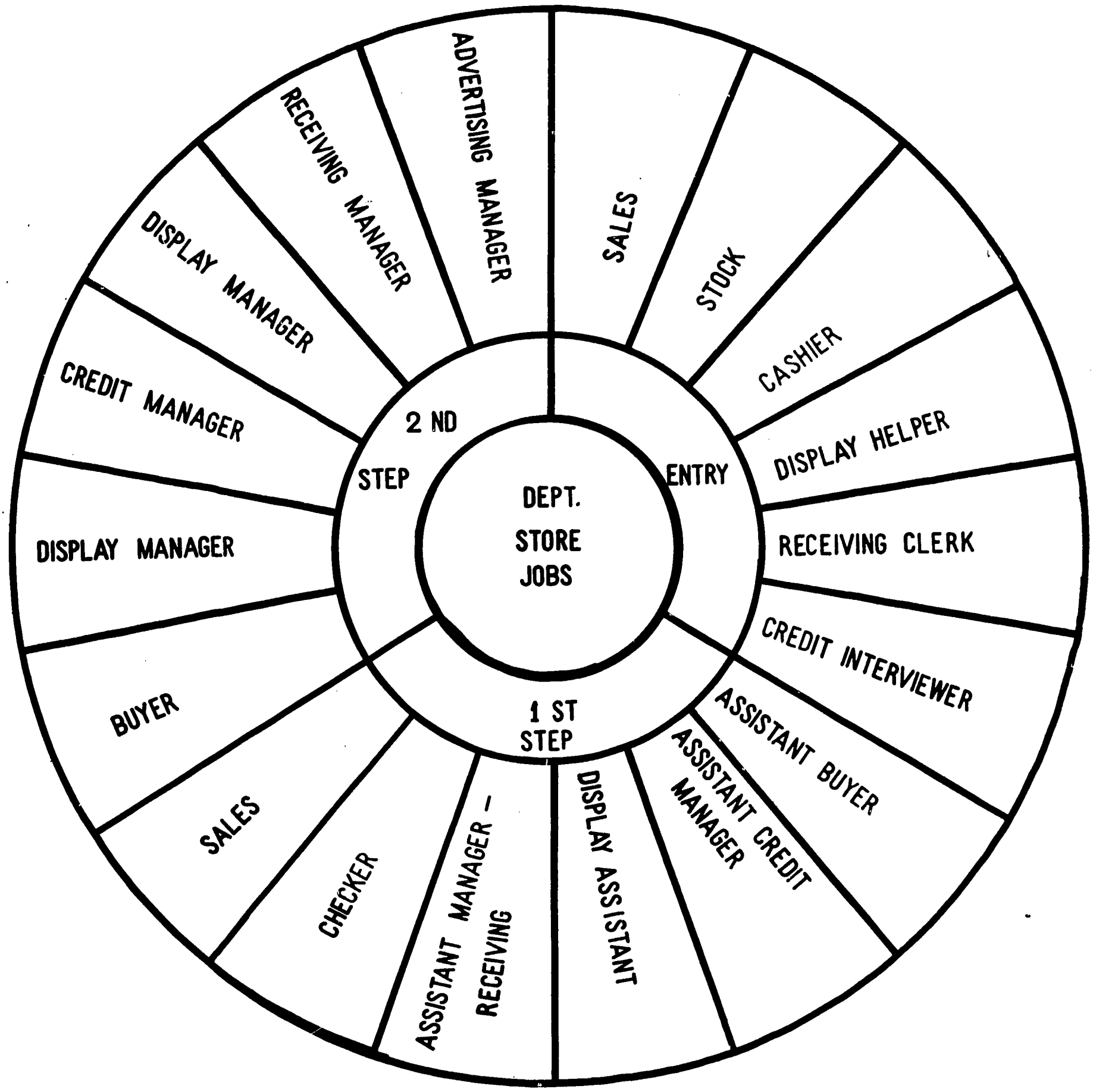
We still cherish the happy memories of your visit to our campus. Hurry Back!

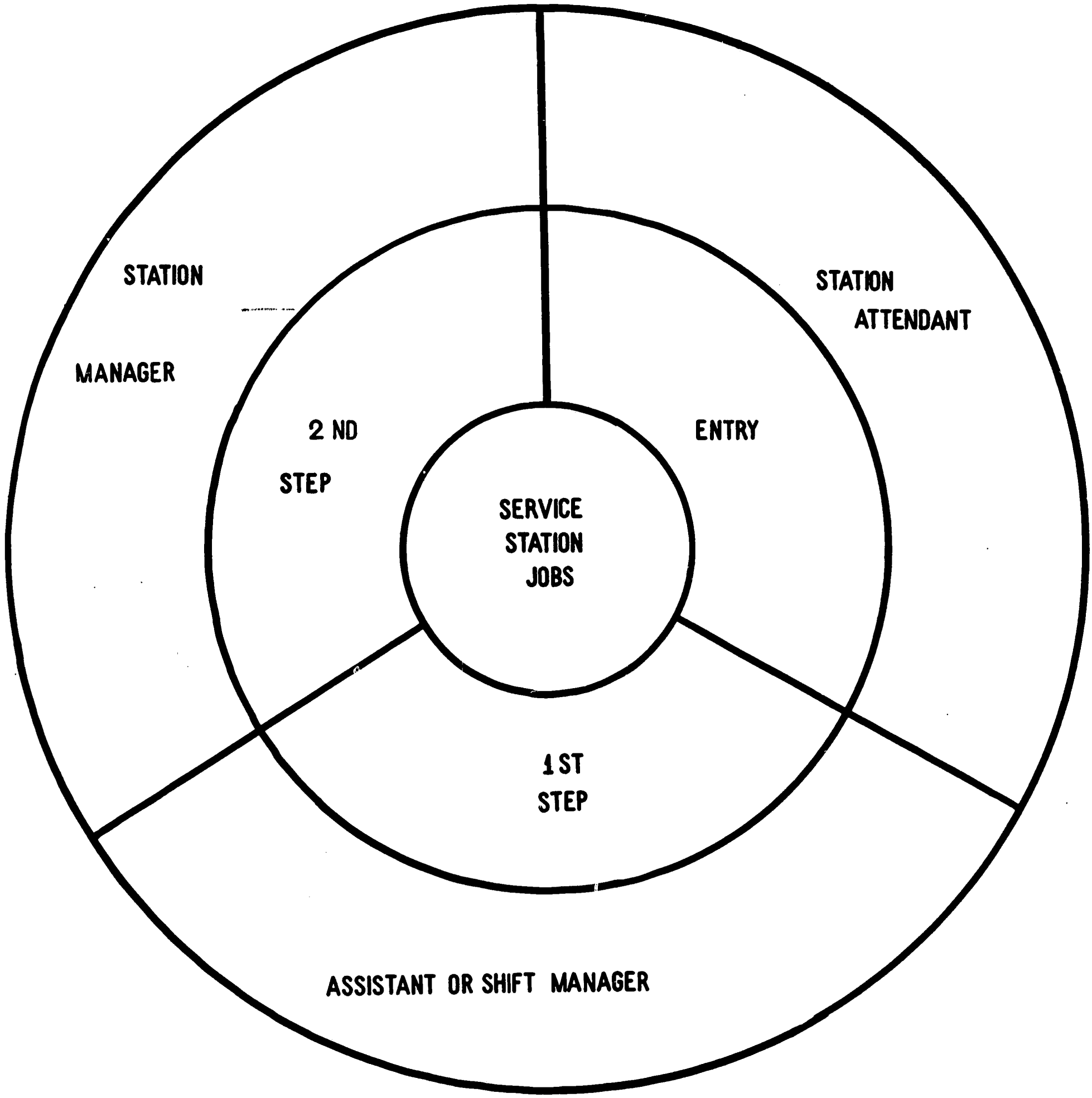
LCC/lcn

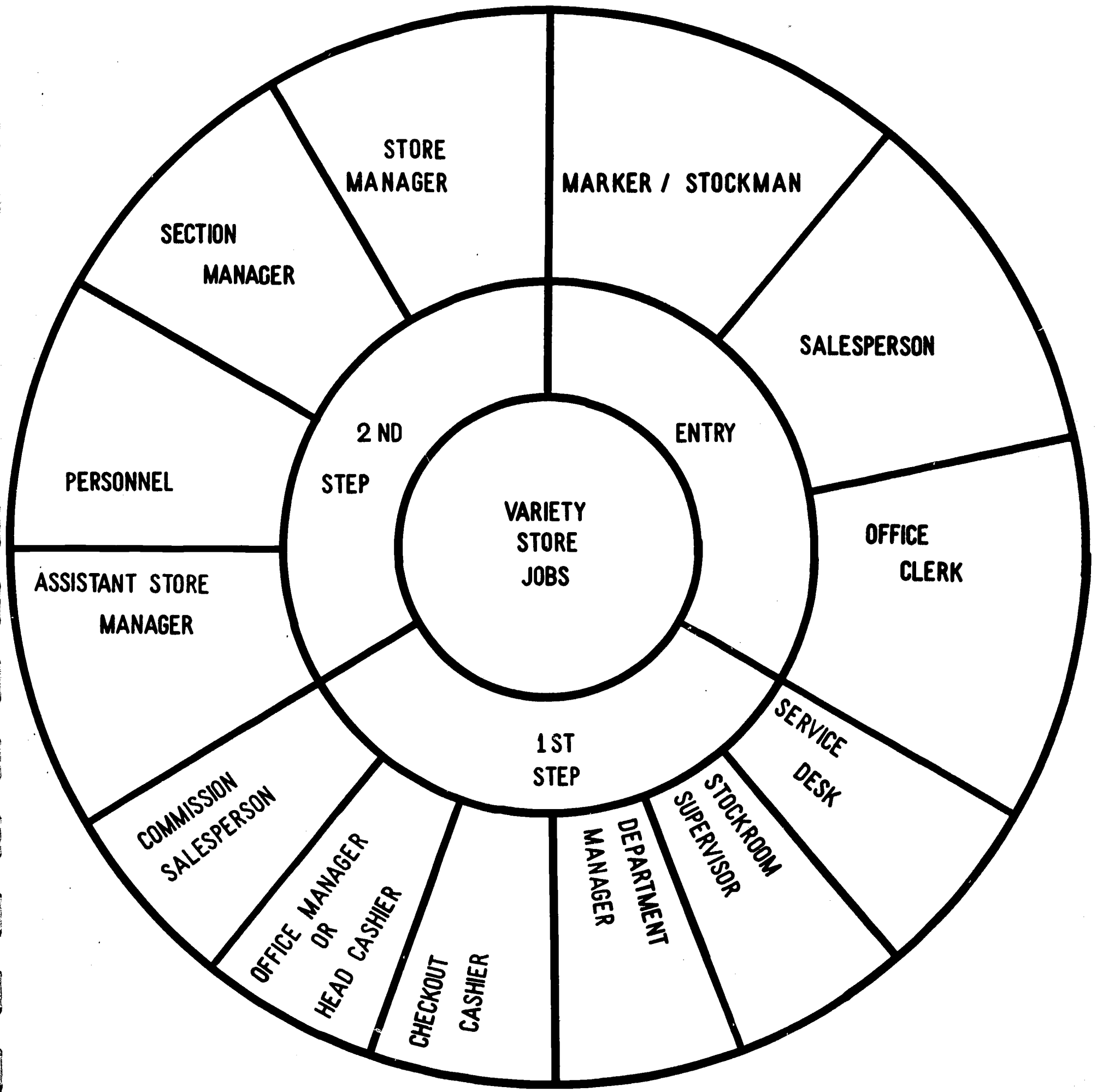
Enclosures

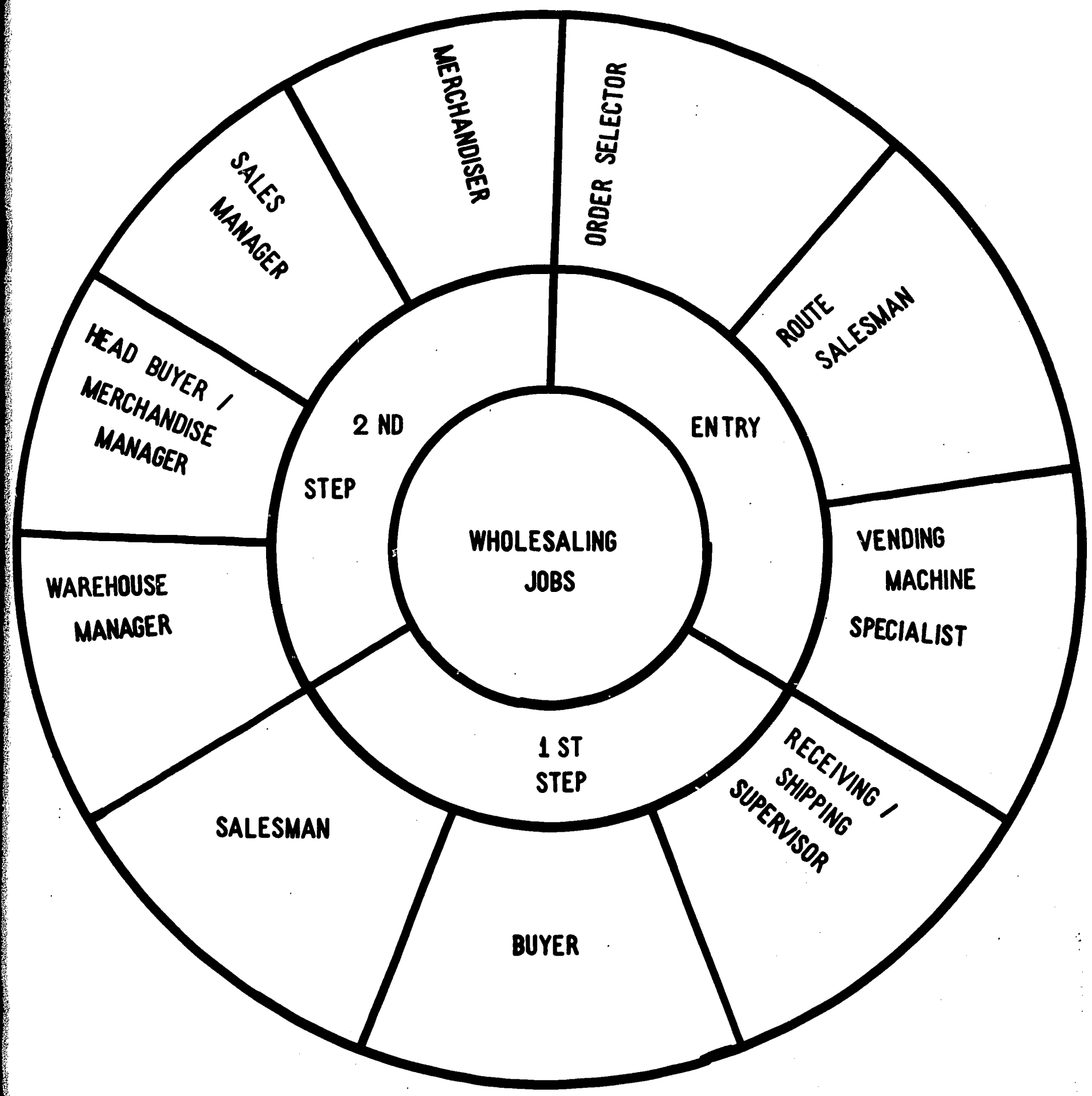
A DISTRIBUTIVE EDUCATION CURRICULUM CONCEPT

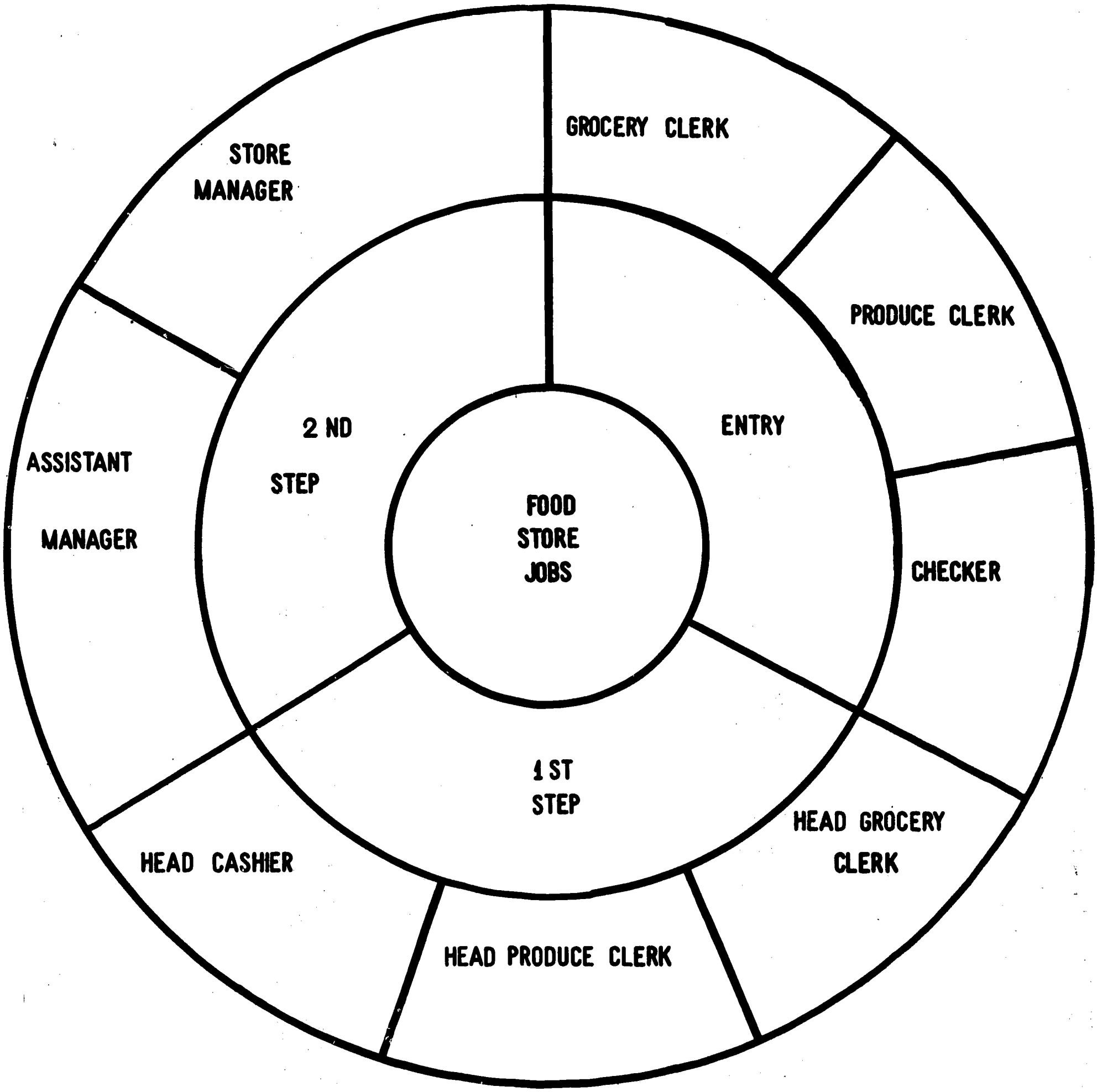


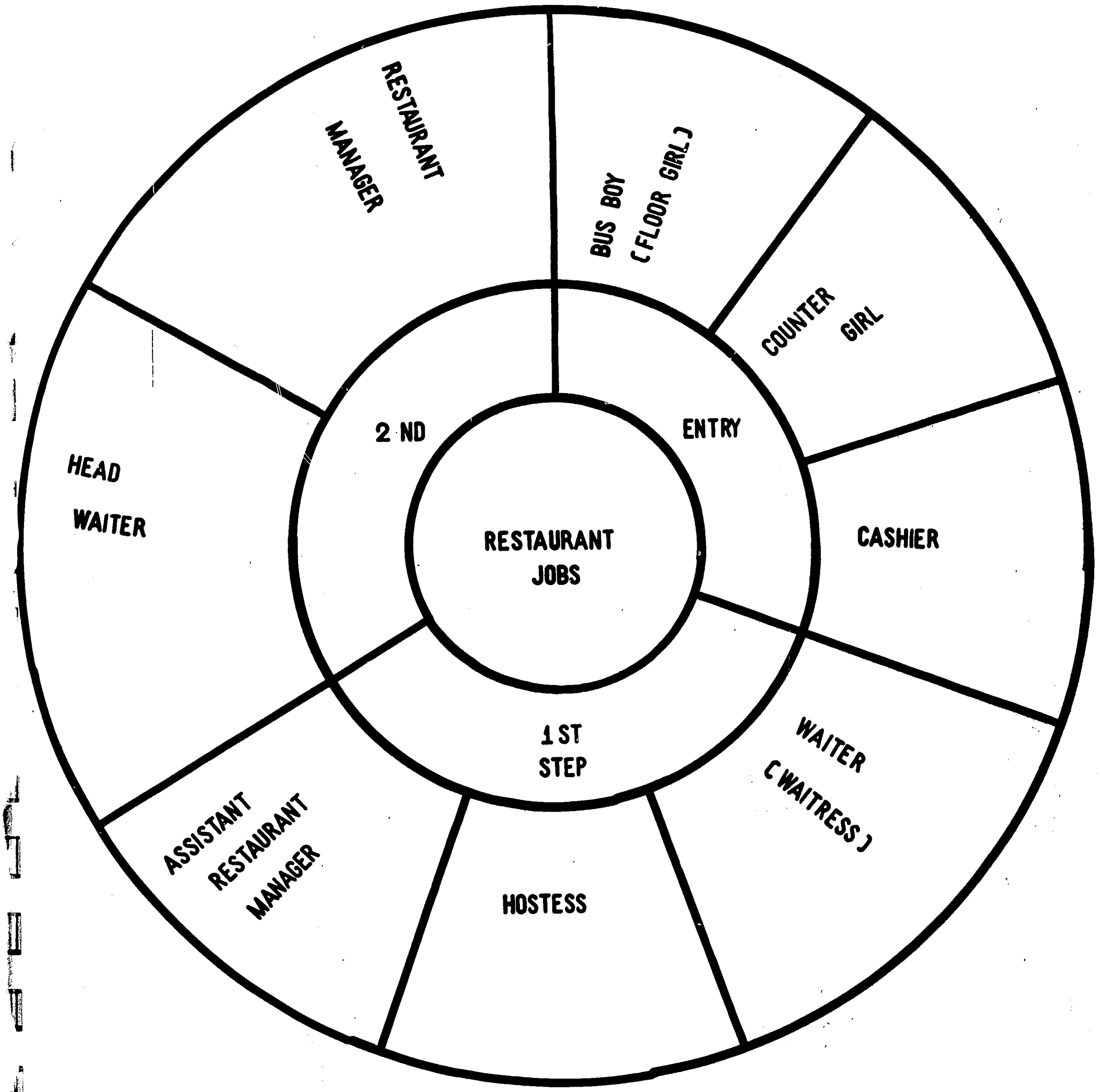

DEPT.
STORE
JOBS
ENTRY
2 ND
STEP
1 ST
STEP
ADVERTISING MANAGER
RECEIVING MANAGER
DISPLAY MANAGER
CREDIT MANAGER
DISPLAY MANAGER
BUYER
SALES
CHECKER
ASSISTANT MANAGER – RECEIVING
DISPLAY ASSISTANT
ASSISTANT CREDIT MANAGER
ASSISTANT BUYER
CREDIT INTERVIEWER
RECEIVING CLERK
DISPLAY HELPER
CASHIER
STOCK
SALES

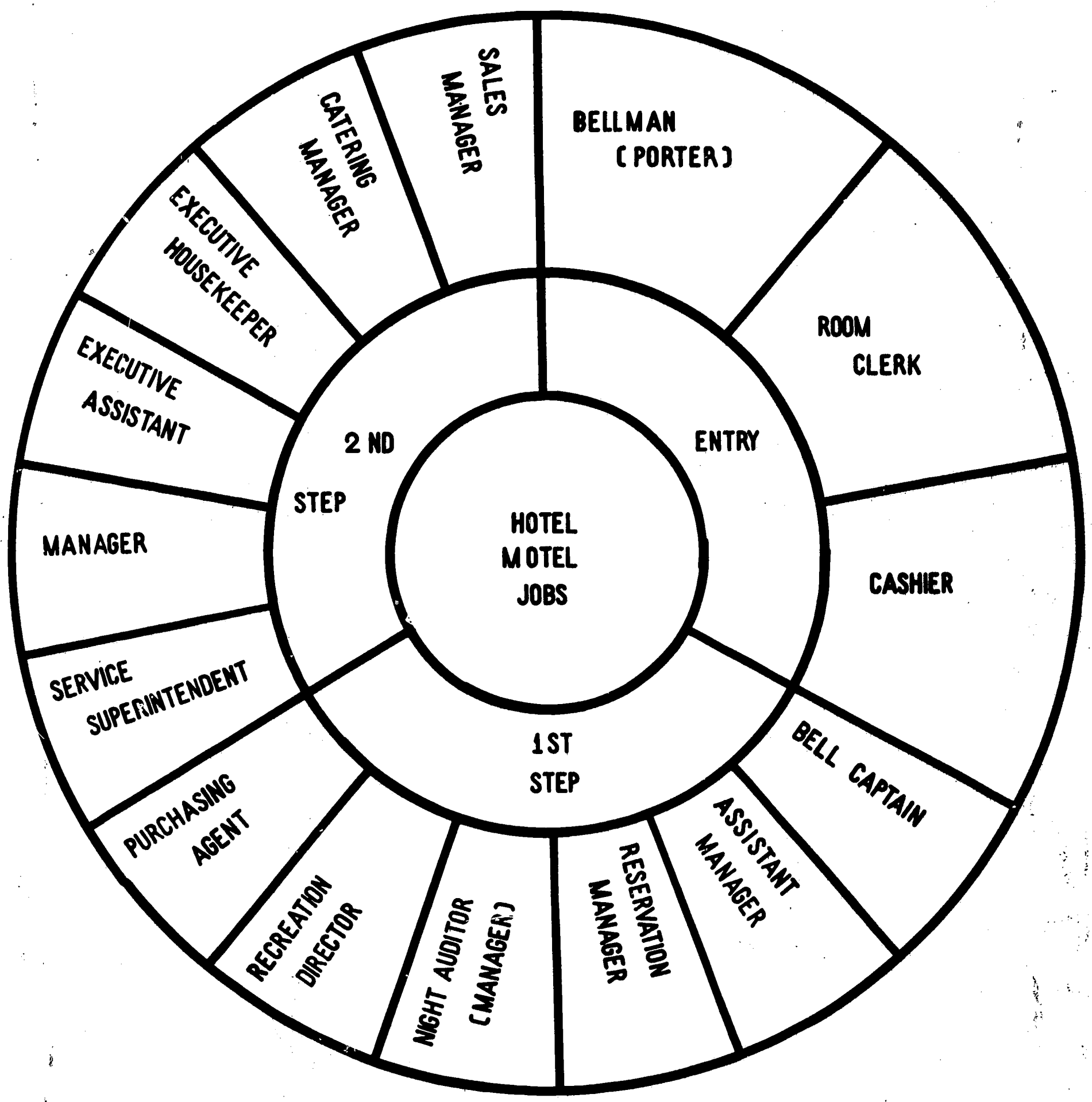

STATION
MANAGER
STATION
ATTENDANT
2 ND
STEP
ENTRY
SERVICE
STATION
JOBS
1 ST
STEP
ASSISTANT OR SHIFT MANAGER


VARIETY STORE JOBS
ENTRY
2 ND STEP
1ST STEP
STORE MANAGER
MARKER / STOCKMAN
SALESPERSON
OFFICE CLERK
SERVICE DESK
STOCKROOM SUPERVISOR
DEPARTMENT MANAGER
CHECKOUT CASHIER
OFFICE MANAGER OR HEAD CASHIER
COMMISSION SALESPERSON
ASSISTANT STORE MANAGER
PERSONNEL
SECTION MANAGER


WHOLESALING JOBS
ENTRY
2 ND STEP
1 ST STEP
MERCHANDISER
ORDER SELECTOR
ROUTE SALESMAN
VENDING MACHINE SPECIALIST
RECEIVING / SHIPPING SUPERVISOR
BUYER
SALESMAN
WAREHOUSE MANAGER
HEAD BUYER / MERCHANDISE MANAGER
SALES MANAGER


STORE MANAGER
GROCERY CLERK
PRODUCE CLERK
CHECKER
ASSISTANT MANAGER
2 ND STEP
ENTRY
FOOD STORE JOBS
1 ST STEP
HEAD CASHIER
HEAD GROCERY CLERK
HEAD PRODUCE CLERK


RESTAURANT JOBS
ENTRY
2 ND
1 ST STEP
RESTAURANT MANAGER
BUS BOY (FLOOR GIRL)
COUNTER GIRL
CASHIER
WAITER (WAITRESS)
HOSTESS
ASSISTANT RESTAURANT MANAGER
HEAD WAITER


HOTEL
MOTEL
JOBS
ENTRY
2 ND
STEP
1ST
STEP
BELLMAN
(PORTER)
ROOM
CLERK
CASHIER
BELL CAPTAIN
ASSISTANT
MANAGER
RESERVATION
MANAGER
NIGHT AUDITOR
(MANAGER)
RECREATION
DIRECTOR
PURCHASING
AGENT
SERVICE
SUPERINTENDENT
MANAGER
EXECUTIVE
ASSISTANT
EXECUTIVE
HOUSEKEEPER
CATERING
MANAGER
SALES
MANAGER

APPENDIX F

ILLUSTRATIONS OF MATERIALS DEVELOPED BY PARTICIPANTS
AFTER TERMINATION OF INSTITUTE

DELEWARE OCCUPATIONAL RESEARCH COORDINATING UNIT

INFORMATIONAL BULLETIN

Assistance to Deleware educators to keep
them informed of developments in the
field of Occupational Education

"ZONED ANALYSIS TECHNIQUES IN PLANNING AND CURRICULUM DEVELOPMENT"

I. WHAT IS "ZONED ANALYSIS"?

A. METHOD OF GRAPHIC DELINEATION

1. Explanation: Zoned analysis is a method of graphic delineation which may be explained as a system through which factors involved in any organizational or research project may be arranged in orderly sequence on an easy-to-understand chart. The analysis proceeds from the general to the specific according to a predetermined and definite plan.

2. Function: When the chart has been completed, it functions as a master plan which shows the relationship of each part to the whole. Because the factors are arranged logically, constructive action is a natural result. While the chart is not an unalterable document, and changes will be found necessary as an investigation proceeds, they will be minor - more in the nature of additional detail rather than of structural alteration.

B. PLAN FOR DEVELOPMENT

1. Form of the Chart: The zoned analysis chart is in the form of a series of circles described around a central core, thus establishing the boundaries for a series of zones. The number of zones will vary with the project to be analyzed. These zones may be given significant titles if desired. Such titles are not particularly important or necessary where one person is making an analysis for his own use. However, when a number of persons are to take part in a study, the naming of the zones is important.

2. Definition of Terms Used: Experience has proved that words may be interpreted differently by the persons reading them. For example, the word "unit" has significant meaning only if one defines its use in a specific case. In any analysis, outline, or research the objective must be delimited. In Zoned Analysis, it is also important that the core be given a clear-cut title which will restrict the scope of the investigation. The words used to delimit the title may have differing connotations and it is, therefore, necessary to make a concise explanation of what is meant. For the same reason, it is desirable to limit the moaning of titles assigned to zones and to define them by clear-cut statements.

3. Partitition of Zones: The accompanying chart shows how the zones are partitioned. The first zone beyond the core, "Zoned Analysis," is divided into two parts entitled, "What it is" and "How it is Used." Each of these is divided in the second zone; in the third zone a further division takes place. The principle involved is that as an investigation proceeds from zone to zone, each new item must break down into two or more parts. This process of division may continue indefinitely; it results in more and more detail with the progression from one zone to another. The number of zones will, therefore, depend upon the objective. All factors included in a single zone must be parallel. This does not mean that they must necessarily be equal to each other in all respects; the extent of their parallelism is distinctly influenced again by the objective of the analysis. It will be easier to check for parallelism if the same parts of speech and grammatical construction are used to identify the factors in a given zone.

II. HOW IS ZONED ANALYSIS USED?

A. AS A CONFERENCE TOOL

A conference is a meeting or series of meetings called to consider specific problems. The participants are usually experienced and thus qualify to represent points of view related to the subject. "Zone Analysis" may be used effectively to analyze the problem, to arrange the facts in an orderly sequence and to present an over-all picture which may be used in drawing conclusions.

1. Preparation: Before the conference begins, the leader should define the subject to be considered and give it a clear-cut title. This is the core. He may then classify zones, bearing in mind that these classifications should provide for more and more detail as they move away from the core. Materials needed, such as books, other analyses, related information, and the like should be assembled. If a blackboard is to be used, he should have chalk, a large blackboard compass, an eraser, and a straight edge. Or, each conferee should be provided with a pre-printed sheet on which circles are already described, the core named, and zones identified.

2. Presentation: The conference leaders hould define the "Zoned Analysis" system. He should read his definition of the core topic and secure a common understanding of the topic to be considered and charted.

3. Delineation: The leader should present a classification of the zones together with an explanation to show how detailed the analysis will become as progress is made from one zone to another. When the conferees understand the meaning of titles assigned to the zones, it is safe to proceed with the actual breakdown. Each part of the first zone breaks into two or more parts in the second zone. The same progression continues from zone to zone.

4. Summation: If the suggestions made above have been followed, it will be possible to read any section of the chart from the core out, in a straight line, in any direction. For example, referring to the "Zoned Analysis" chart, we read

> "Zoned Analysis is a method of graphic delineation which may be explained as a system by which factors are arranged in an orderly manner."

or

> "Zoned Analysis is used as a conference tool; in preparing for a conference, the leader should define the subject to be considered."

As the chart is read, corrections may be made. When all this has been done, the conferees will have a clear-cut, detailed analysis. They are then ready to take action. If no definite action seems appropriate, this same Zoned Analysis system may be followed in analyzing the various possible actions. The core might be in the form of a question. The first zone might state possible actions, the second one advantages and disadvantages of different actions, and the third might be

details involved. In any case, the whole picture would be before the group in a visual form. Psychologically, it is a good form because the eye is drawn toward and held by circular shapes.

B. AS AN OUTLINE

The same factors are involved in using Zoned Analysis for the development of an outline. It makes no difference what the purpose of the outline might be - a theme, a research paper, or an organization plan - the system is a visual aid which can be used effectively. The factors involved include delimitation of the objective and a definition; identification of the zones and definition of what they mean; and a check to make sure that the progression will result in an increasing number of details. Elaboration will include details which must be parallel within each zone; and finally, in summarizing, it must be possible to read the chart and check it for accuracy.

NOTES:

THE ZONED ANALYSIS CHART IS A VISUAL AID:

The chart attached is the outline which has been followed in preparing this informational bulletin. The breakdown of separate "Zones" includes:

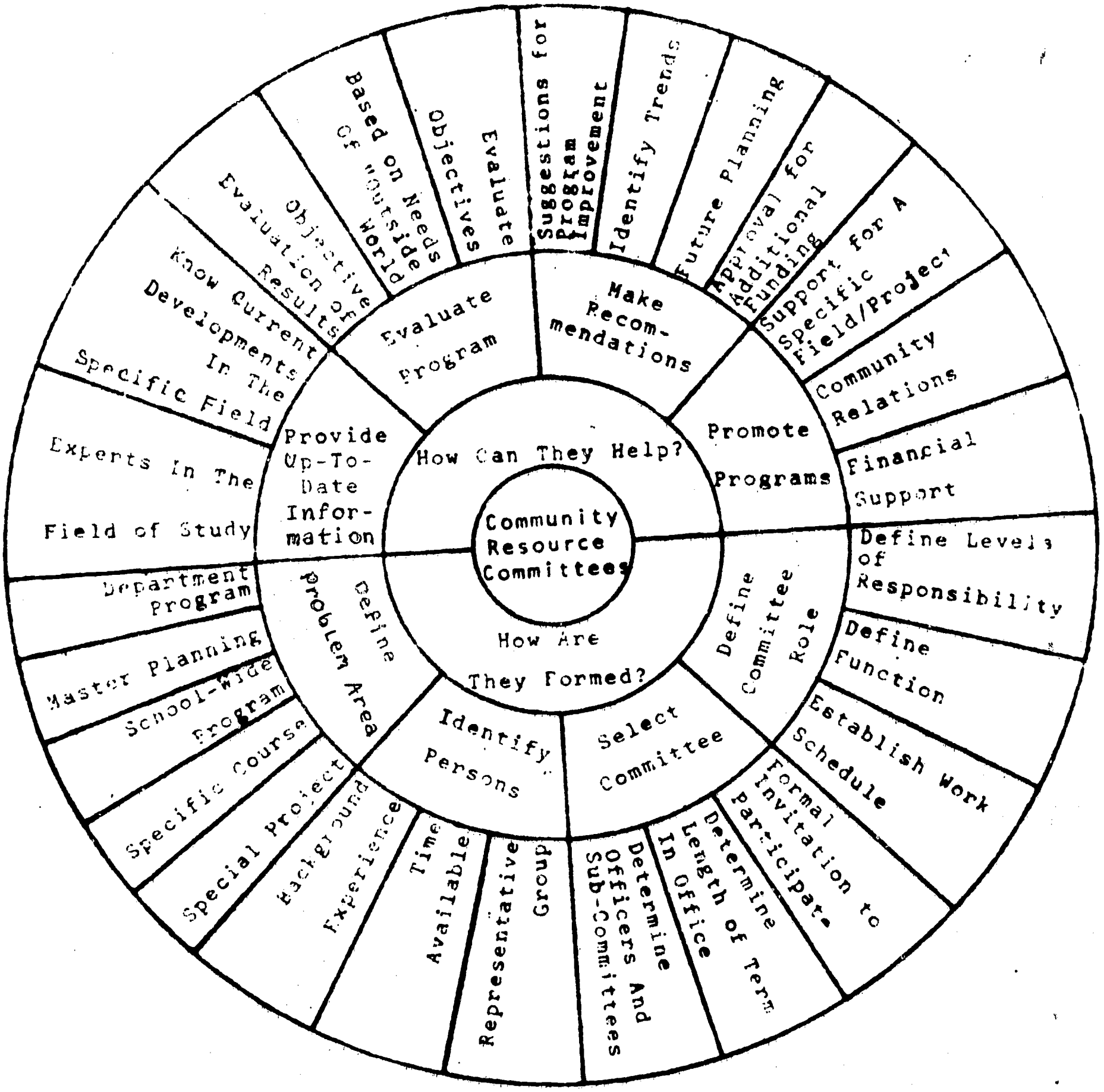
The Core: "Zoned Analysis"
Zone #1 : Major Ideas To Be Considered
Zone #2 : Primary Breakdown of Ideas
Zone #3 : Subjects for Discussion
Zone #4 : Details Regarding Subjects

Attached also is a blank "Zoned Analysis Chart". Try this analysis technique on a special problem you are working on!

ZONED ANALYSIS CHART

Topic: "Community Resource Committees" (Advisory Committees)

Developed by: R. A. Dieffenderfer Date: 8/16/68



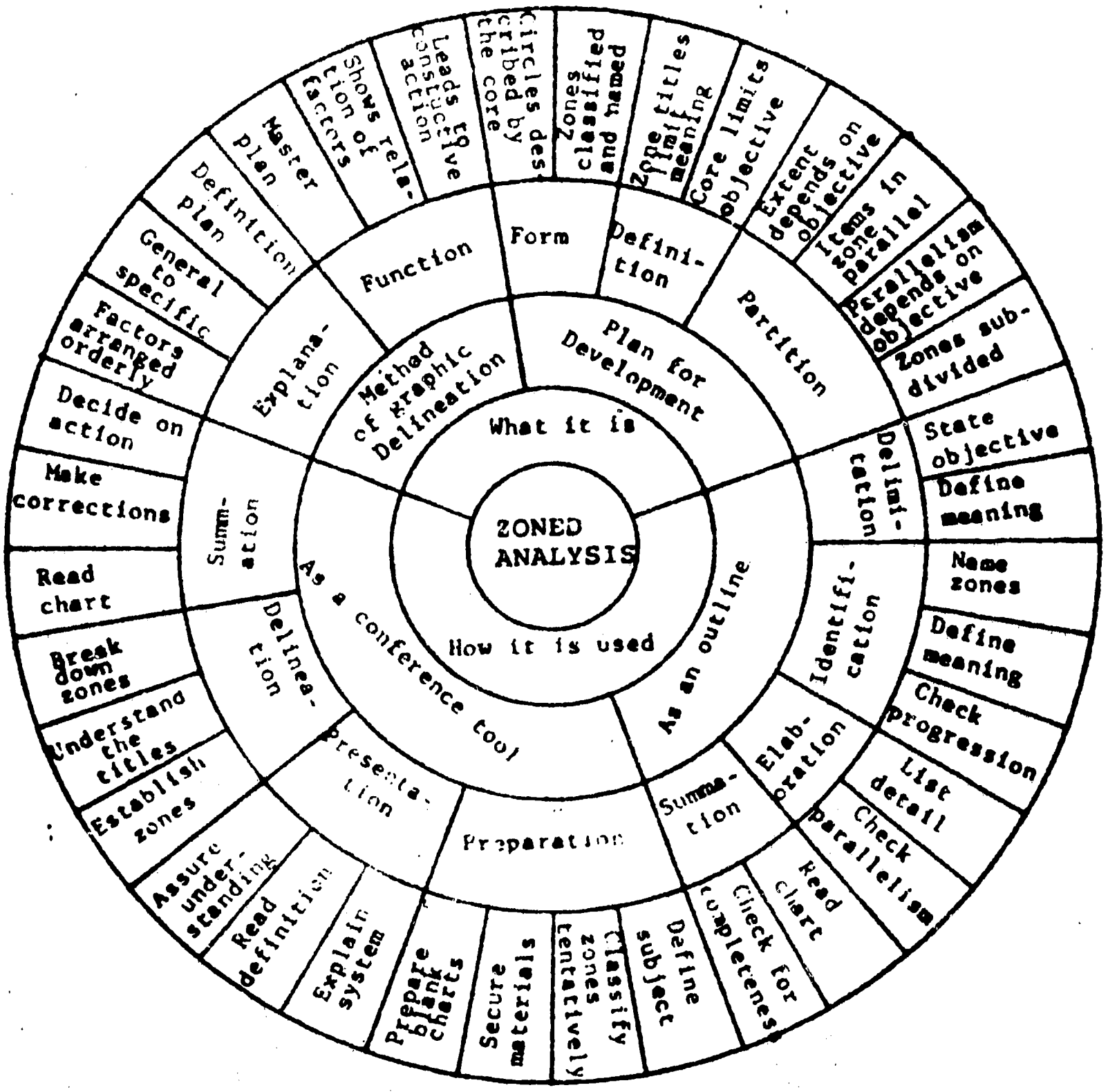
Objective: To illustrate procedures for establishing "Community Resource Committees" and the function they can serve in educational Programs

DELAWARE OCCUPATIONAL RESEARCH COORDINATING UNIT

ZONED ANALYSIS CHART

Topic: Using Zoned Analysis Techniques

Developed by: Delaware ORCU Date: October 1, 1968



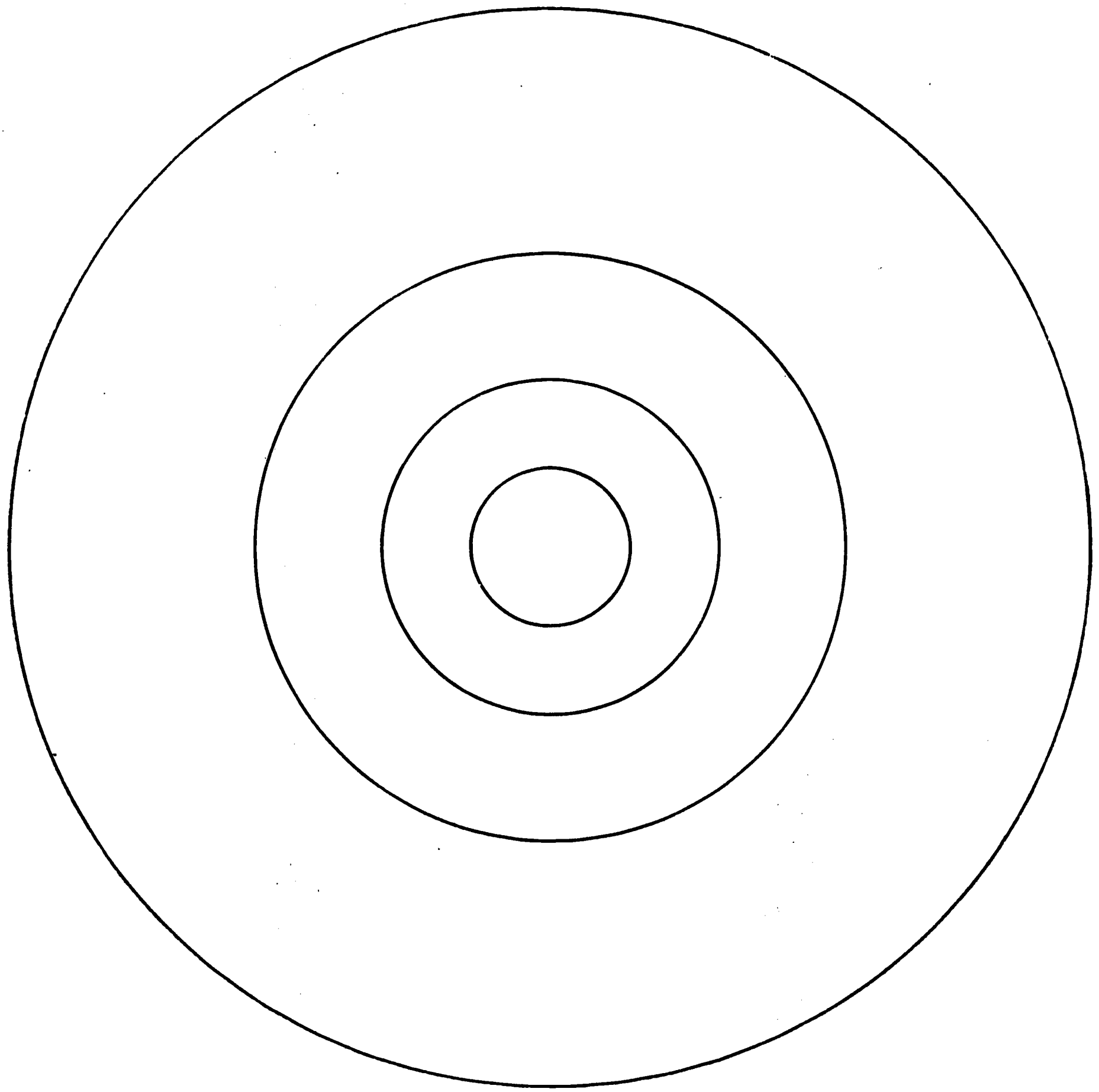
Objective: To describe the "Zoned Analysis" technique and illustrate various ways it may be used in educational planning.

DELAWARE OCCUPATIONAL RESEARCH COORDINATING UNIT

ZONED ANALYSIS CHART

Topic: _____

Developed By: _____ Date: _____



Objective: _____

_____

_____